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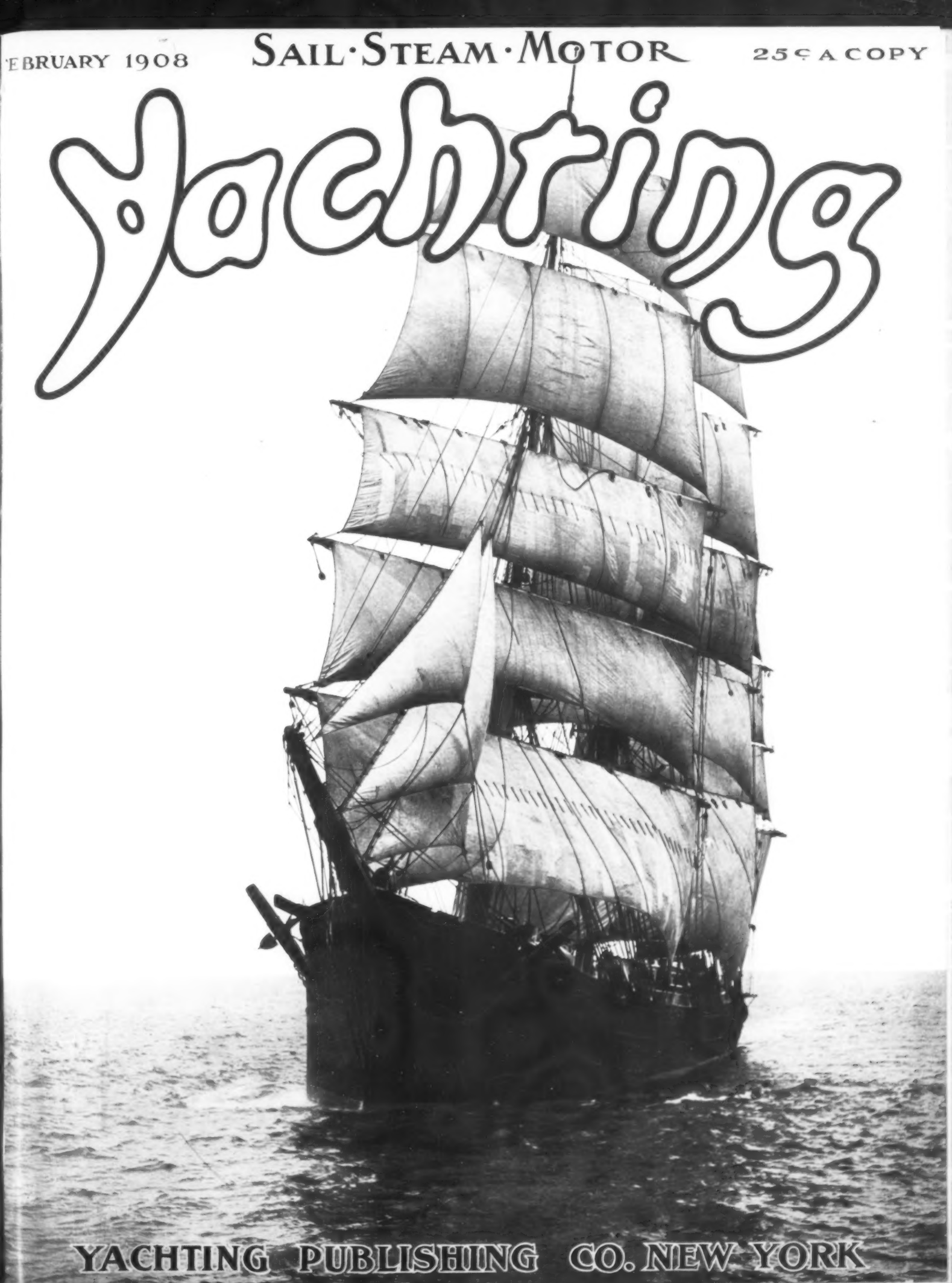

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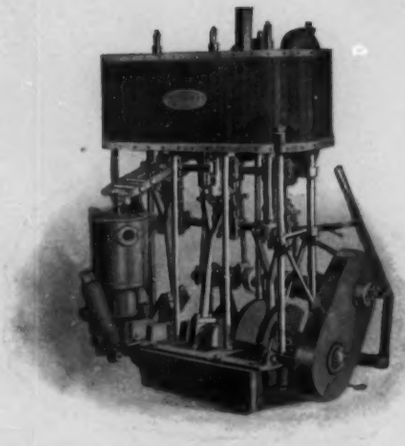

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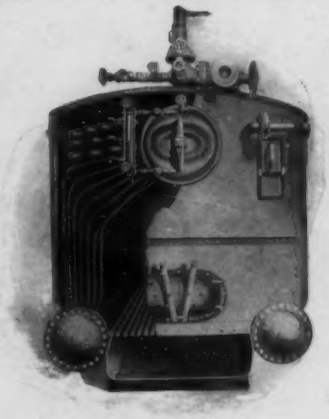

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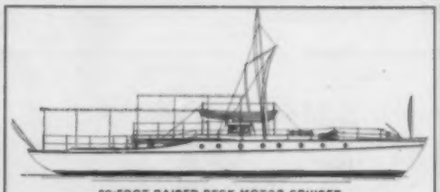

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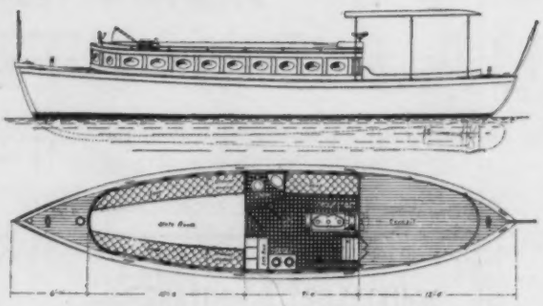

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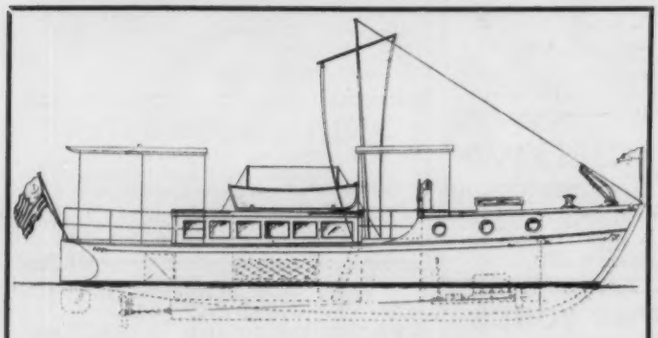

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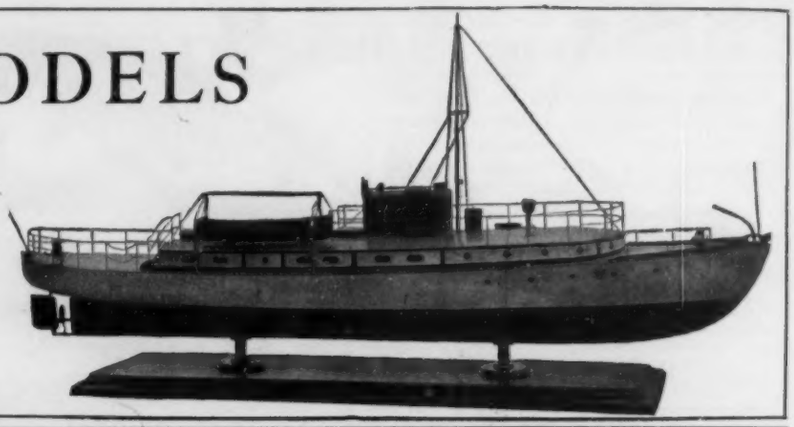

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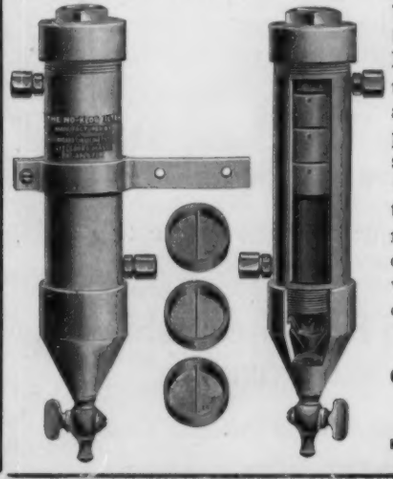

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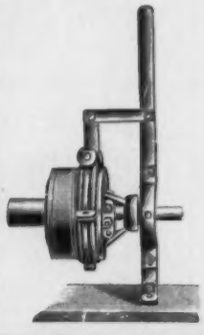

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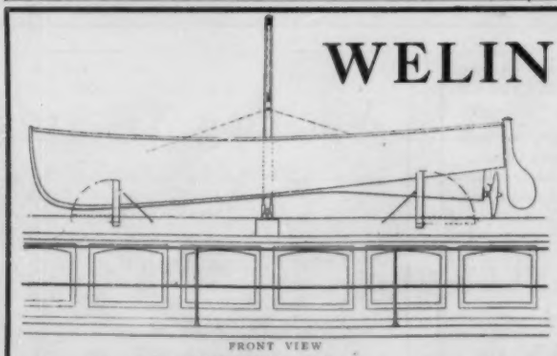

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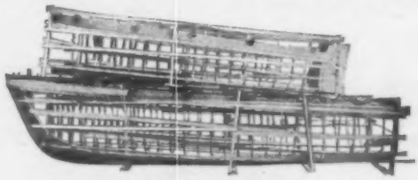

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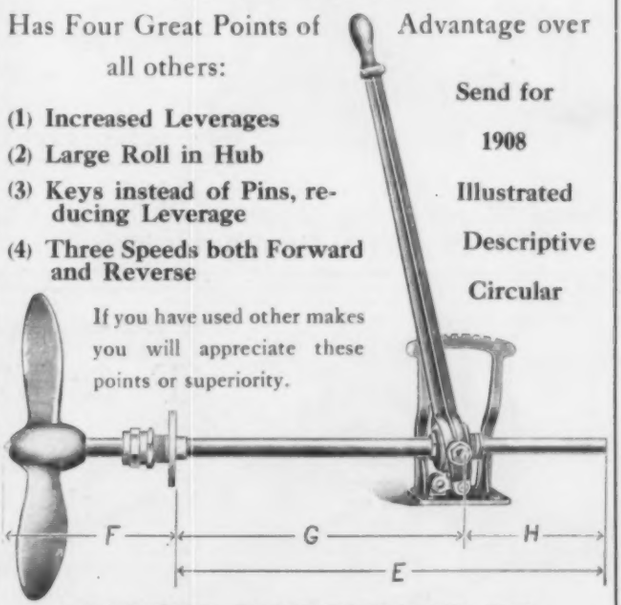

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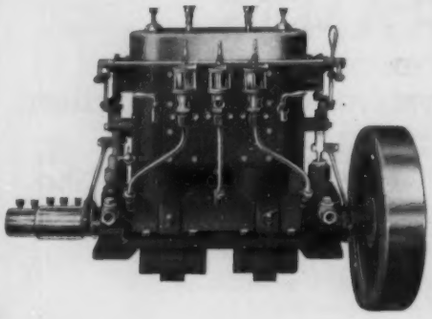

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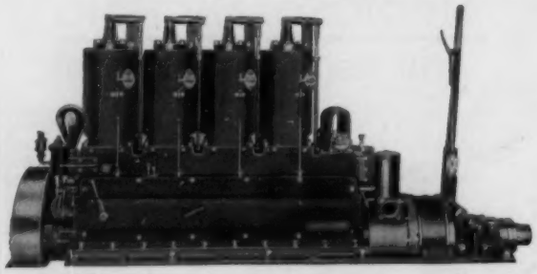

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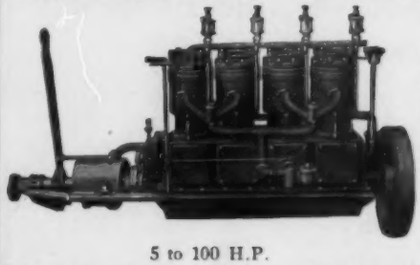

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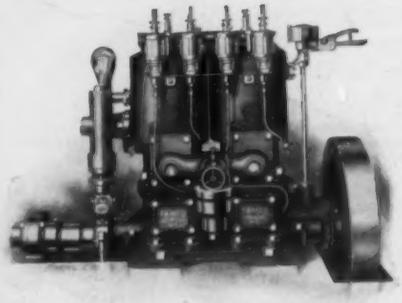

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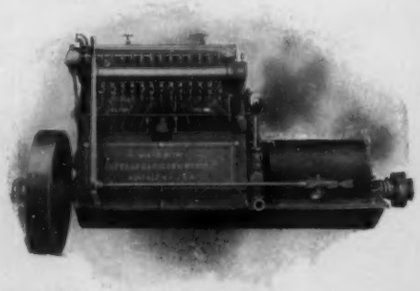

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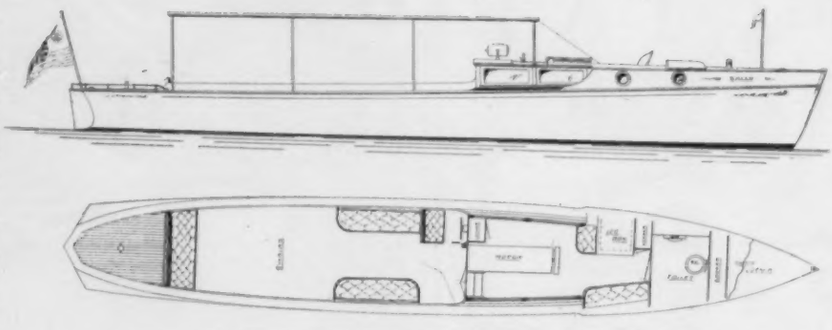

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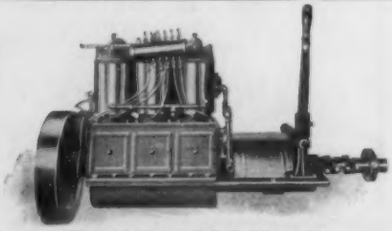

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VOL. III. No. 2.

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LAWRENCE PERRY, Editor

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THE NIGHT PATROL.

"Fighters of the Sea." Page 84.

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VOLUME III.—NUMBER 2

February, 1908

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THE THIRTY-FOOTERS ON THE SOUND. A TYPICAL SCENE OF RACING IN THIS CLASS.

The New York Yacht Club One-design 30-Footers

THE INTERESTS OF PURE SPORT HAVE NEVER BEEN BETTER SERVED THAN BY THE EIGHTEEN MEMBERS OF THE GREATEST YACHTING ORGANIZATION IN THIS COUNTRY, WHO, IN 1904, AGREED TO BUILD SLOOPS OF THIRTY FEET WATER LINE, CONSTRUCTED FROM ONE DESIGN—THE CLASS IS STILL AN IMPORTANT FEATURE IN MANY OF THE BIG EASTERN REGATTAS

By LAWRENCE PERRY

Photographs by James Burton, James Huntington and Others

FOR some years now the general tendency of American yachtsmen has been to get away from the professional sailing master. This is a decided contrast to conditions in England and other foreign countries, and we may take unto ourselves no small amount of pride that such is the case. In this country the average owner of a racing yacht under forty feet water line has no desire to pay a man to handle the stick of his craft and win his trophies for him. And what is still better, he has not the slightest need for such a man. He is able to win cups for himself.

Even in the larger boats the trend towards the elimination of the professional skipper is marked, especially where the owner is a graduate of a smaller class. Now, we have no intention here of holding any brief against the paid captain of a racing yacht, or cruising craft either for that matter. He has his place, and deserves it, even if the practises of members of his guild have had the result of driving out of the sport many a good yacht owner. But we do hold it to be a healthy sign that classes interdicted to professional helmsmen have been and are from time to time being formed and that in American waters the man who hires a captain to sail his races in a boat of relatively small water line, say from forty odd feet down, is regarded, not alone by his Corinthian brethren, but by his clubmates at large, with feelings not divorced from a mild contempt.

In the New York Yacht Club there is a strong Corinthian spirit. Probably more men who can hand reef and steer with the ablest professionals are enrolled in this organization than in any other yacht club in the world. This tendency in the course of the history of the club, has shown itself in many marked ways, never more decidedly, however, than in the thirty-foot one-design class organized early in the year 1905.

The assertion may be ventured that this class is the most successful that ever raced on the Sound. In their first year, otherwise an off year in yachting, the beautiful sloops did much to lift the eastern season above the commonplace, and since then the "thirties" have been important factors in the regattas of the New York Yacht Club as well as in those of many of the Sound organizations.

With the general good of the sport in mind, it is patent that you cannot put eighteen enthusiastic, skilful yachtsmen into as many boats built from one design by a master of the art of producing swift yachts and obtain negative results. Exciting, sportsmanlike races may, of course, be accepted as a corollary; but other elements, perhaps more important, are involved, not the least of which, as before intimated, is the furtherance of the amateur spirit, the establishment of a morale which directly redounds, not alone to the advantage of the club directly concerned, but to every organization of yachtsmen throughout the country.

In large measure this class embodies the experiences obtained from study of a noble line of thirty-foot sloops, running through ten years. A consideration of the process of evolution which began in 1894 is interesting. In that year the Herreshoffs

ALERION. THIS SLOOP WAS BUILT IN 1894. THE DEFENDER COLUMBIA APPROXIMATED HER LINES.

designed and built Alerion, the essential idea being, it is said, to try out on a small scale the principles afterward applied in the design and construction of the successful defender of two America's Cup races, Columbia.

To digress a moment, it might be suggested that those who are interested in following, as well as may be, the professional processes of the "Wizard of Bristol," could find in this story of Alerion a hint well worth investigating. In this connection, the fact may be offered to those not of an observing nature that the lines of that Herreshoff creation, the schooner Queen, approximate on a large scale those of the present thirty-footers.

At all events, Alerion proved a success at the outset. In 1900 and 1901 we find Class N—thirty-footers of all sorts of design—a prominent feature in the regattas of those years. The most important of these boats are still fresh in mind. Many of them are still racing and winning cups. There were Alfred Peats' Empronzi; J. R. Maxwell, Jr.'s Oiseau; J. M. Ellsworth's Lorelei; C. D. Mower's Jessica; H. B. Welsh's Crony; R. Sand's Ouaniche and many others. And in all races Alerion, owned by A. H. and J. W. Alker, was a factor constantly to be reckoned with.

In 1903 came the Manhasset Bay Challenge Cup for thirty-footers, which was successfully defended by the Alker sloop, Alert, a Herreshoff mahogany boat, built in 1899. The yachts which sailed in this series of races and the points made follow: Alert, 22; Marion, 19; Oiseau, 14; Bobtail, 13; Mimosa, 11; Bagheera, 9; Empronzi, 7; Flosshilde, 3. Such racing as these figures suggest merited attention. As a matter of fact, attention was bestowed, as future results testified. In 1904, Trenor L. Park's Mimosa, sailing under the burgee of the American Yacht Club, took the cup across the Sound. She was a Crowninshield boat, and a fast one, too. In 1905 the Manhasset yachtsmen sought to regain the prize, but failed through the instrumentality of another Park sloop, Mimosa III, and the beautiful trophy still rests in the club house at Rye.

In the meantime, the eyes of several influential members of the New York Yacht Club had been resting on these thirty-footers and their work in the various regattas, especially those of 1904, were carefully noted. It is probable that the three attempts of Sir Thomas Lipton to capture the America's Cup, following one another so closely, had the effect of causing more or less of a revulsion of feeling from the large yacht and the incidental expenses attached thereto. At all events, thanks to the activity of W. B. Duncan, Jr., plans for a class of thirty-foot sloops of one design were formulated and invitations to build in this new division were sent to the racing members of the Club, of whom the following agreed to build: O'Donnell Iselin, J. W. and A. H. Alker, J. E. and E. C. Meyer, William D. Guthrie, Newberry D. Lawton, W. and A. G. Hanan, Harry L. Maxwell, Howard Willets, J. Murray Mitchell, H. F. Lippitt, August Belmont, George A. and P. H. Adee, George M. Pynchon, Stuyvesant Wainwright, A. T. French and Lyman Delano.

The first of the sloops, Alera, was completed on January 2, 1905, and the other seventeen boats followed rapidly. As they were finished they were taken on trucks from the Herreshoff yards to the Cove, a mile or so below, where through the winter they rested high on the stocks, objects of considerable attention on the part not only of the natives, but of those who found it worth while to make the trip to Bristol to view the exposed underbodies of the latest creations of a master builder.

Built under the Universal Rule, then just in force, the sloops rated well down in their class, 26.91. Their dimensions follow:

43 ft. 6 in. length over all	8 ft. 6 in. beam
30 ft. 0 in. water line	6 ft. 0 in. draught

The appended tables, showing the measurements of the older "thirties," may prove of interest:

Alerion	Oiseau	Mimosa
40 ft. 0 in. l.o.a.	42 ft. 0 in. l.o.a.	39 ft. 8 in. l.o.a.
27 ft. 3 in. l.w.l.	25 ft. 5 in. l.w.l.	25 ft. 8 in. l.w.l.
8 ft. 6 in. beam	10 ft. 0 in. beam	9 ft. 4 in. beam
6 ft. 6 in. draught	6 ft. 0 in. draught	6 ft. 9 in. draught

NYKE, FORMERLY OISEAU. CONTESTANT FOR THE MANHASSET BAY CHALLENGE CUP.

THIRTY-FOOTER, ALERA, WINNER OF CHAMPIONSHIP TROPHIES IN ONE-DESIGN CLASS.

All, or practically all, of the ballast of the new thirty-footers was put on the outside. The frames were of white oak, the planking yellow pine. The deck was of white pine, canvas-covered and painted. There was a raised cabin house of mahogany, with plate glass windows. The spars were solid wood and the sails were a mainsail, No. 1 and No. 2 jibs, balloon jib and spinnaker. The running rigging was of Manila rope and the standing gear, steel wire.

The first rig included a bowsprit a foot long, which admitted of a sail spread of 1,080 feet. Later, the bowsprit was lengthened 2 feet 3 inches, bringing the spread of canvas up to 1,100 feet. In the main cabin there were four berths, a good-sized toilet, full galley fixtures, an ice-box and, forward, two pipe berths for the crew. In the main cabin a dining table was formed by placing a folding board upon two T squares. These squares were fitted in sockets running down into the keel.

It will thus be seen that there was little of the racing machine about these boats. There was, in fact, nothing to suggest it. They were good, husky sloops, fit for racing, fit for cruising, and they have been applied to both pursuits with equal success. They were just a bit difficult to steer in dusty weather, but the lengthening of the bowsprit eliminated this slight defect, and thereafter the most finical yachtsman would have looked in vain for any shortcoming in these wonderful craft.

The men who had placed their orders for the boats drew them by lot early in April, 1905, and thereupon bestowed upon them the names which had been selected some weeks previous. The racing rules for the class are worth printing, inasmuch as they were evolved purely in the interests of sane and sportsmanlike contests among gentlemen who know how to stand their trick at the wheel, or tend sail. The crew, then, was not to exceed five men, two of whom might be paid hands. The helmsman, however, must never under any circumstances be a professional. Boats were not to be hauled out more than once in three weeks, and once out must remain out not more than three days. No more than two new suits of sails were allowed in any one season. Balloon jibs were barred, except when racing against boats not in the class. The hoist of the mainsail must not be more than 28.3 feet. The boom was not to exceed 32 feet; gaff, 19 feet; bowsprit outboard, 3.3 feet; spinnaker boom, 19.6 feet. Ballast or spars were not to be altered in the course of a season. Pot leading was not permitted. Prize money to the paid hands was limited to four dollars for first place and one dollar for start.

The young yachtsman who this season perhaps will sail his own boat for the first time cannot fail to be interested in the list of equipment for each one of the new sloops, which follows:

1 47 lb. gooseneck anchor; 1 47 lb. straight stock anchor; 5 life preservers; 2 fenders; 1 sounding lead and line; 1 30 in. fog horn; 1 8 ft. boat hook; 2 running lights; 1 anchor light; 1 canvas pail; 1 deck mop; 1 ten quart galvanized pail; 1 scrub brush; 2 pipe berths; 2 mattresses; 2 blankets; 8 sheets; 2 pillows; 4 pillow slips; 1 two-burner oil stove; 1 water basin; 1 soap tray; 1 hand brush; 1 dust pan; 1 butcher knife; 1 sugar bowl; 1 bread box; 1 four-quart Berlin kettle; 1 four-quart Berlin sauce pan; 1 coffee pot; 1 tea pot; 1 cook's fork; 1 can opener; 3 mugs; 3 cups and saucers; 1 small dish pan; 1 double boiler; 1 egg beater; 2 enamel pitchers, asst.; 1 lemon squeezer; 1 two-quart milk can; 1 one-half gallon oil can; 1 mixing bowl; 1 potato knife; 1 three-gallon oil can; 1 salt shaker; 1 pepper shaker; 1 small platter; 1 sponge; 1 tea kettle; 2 uncovered dishes; 6 plates, 7½ in.; 3 soup plates, 7½ in.; 6 glass tumblers; 1 broom; 1 tea canister, 1 lb.; 1 coffee canister, 1 lb.; 1 sugar canister; 1 frying pan; 2 funnels, asst.; 1 water pitcher for toilet room; 1 water bottle, tumbler and holder; 1 looking glass; 3 table spoons; 1 mixing spoon; 6 tea spoons; 6 dessert spoons; 6 knives; 6 forks; 3 oatmeal dishes; 1 bowl; 1 doz. towels; 1 wire broiler; 1 brass lantern, Dietz; 2 small lamps; 1 medium lamp; 2 compass night hood; 1 2¼ in. Manila cable, 300 ft. long; 1 2 in. mooring line, 50 ft. long; 1 1¼ in. Manila warp, 180 ft. long; 1 mainsail; 1 No. 1 jib; 1 No. 2 jib; 1 spinnaker; 1 awning and pole; 1 mainsail cover; 9 sail stops; 2 screen boards.

It would take pages to describe the hundreds of races in which the boats of this class have participated. Not only in the regattas of the club whose burgee they fly, but in contests held by most of the organizations within striking distance of New York, the "thirties" have ever been prominent. Blow high, blow low, wherever there was a regatta there would be found a group of these sloops, sailing with a dash, even recklessness, which from the first was characteristic of them. Perhaps the most striking exhibition of gameness was in the last event of Larchmont Week, a day when a northwest wind howled at a rate of from twenty-five to thirty knots. Seven of the thirty-footers, Minx, Alera, Ade-

laide, Banzai, Atair and Phryne, faced the turmoil and of the class here represented, only one sailed under reefed canvas, and if you were on the Sound that day you know what this means. H. Willet's Minx defeated her sister craft in hurricane style, making the 19½ mile course in 3 hours 7 minutes and 28 seconds. Most of the class finished ahead of the two forty-footers in Class M. Strange to say, the only sloop to break down was the one with reefed canvas, Phryne. Atair's captain was washed overboard, but was rescued after a hard struggle.

The first real test of the new class was witnessed in the New York Yacht Club Regatta for the Glen Cove Cups in June, 1905. Fifteen of the sloops participated. There was a good southeast breeze, which came suddenly after a morning calm—as breezes usually do over the Glen Cove course—and the amateur skippers made the most of it. The table below is a speaking indication of the way in which the race was contested by their skippers, and it might be added, the way in which races of these craft have been sailed ever since.

ADELAIDE. SHE RIVALLED ALERA AS A WINNER OF PRIZES.

	Elapsed Time First Round	Elapsed Time Finish		Elapsed Time First Round	Elapsed Time Finish
Phyrne	1.16.12	2.31.55	Dahinda	1.22.52	2.41.04
Oriole	1.16.17	2.32.48	Cara Mia	1.23.21	2.38.56
Banzai	1.16.40	2.33.34	Nautilus	1.23.38	2.39.34
Neola II	1.19.30	2.35.58	Pintail	1.23.59	2.43.12
Minx	1.19.52	2.37.38	Ibis	1.25.10	2.42.15
Alera	1.20.15	2.37.31	Maid of Meurdon	1.25.15	2.46.49
Linnet	1.21.31	2.41.14	Adelaide II	1.26.38	2.49.09
Atair	1.22.17	2.41.13			

Any table of racing concerning these sloops which one may chance to look over will show that the contests have been equally well contested.

"No prettier sight," wrote a spectator of this race, "than the groupings made by the 'thirties' in their contest can be imagined. At times they were grouped, eight or ten, so as to render it impossible to tell which was the leader. At other times they plunged along in single file, one close aboard the other. There were occasions when the follower of this class would see a wonderful duel between this boat and that, and again there would be a general mix-up which even the eye of the expert would have found, in fact did find, difficulty in following."

They have always shown ability to deal savagely with boats of larger classes. Last summer, off Glen Cove, in the races for the Bennet Cups, Alera beat the sixty-footers twenty-seven minutes on time allowance. Their success against larger boats, in fact, brought them into trouble the first year on the New York Yacht Club's annual cruise. W. B. Duncan, Jr.'s Dahinda handily won the Commodore's Cup for sloops in the run from Glen Cove to Morris Cove, while Howard Willet's Minx won the Rear-Commodore's prize for sloops in the run from Morris Cove to New London. The two thirty-footers were protested on the ground that they had disobeyed the rule in regard to cruising trim, inasmuch as they had not carried boats. The owners of the sloops declared that, under the rules, it was optional whether they carried them or not. But the Regatta Committee finally awarded two sets of cups, one to the two thirty-footers and the other to two sloops in larger classes.

That year saw a race of several of the thirty-footers against the Newport thirty-foot class sloops, in which the New York Yacht Club boats did not come out well. Both Eleanora, G. D. Widener and Breeze, W. G. Roelker finished ahead of Cara Mia, Alera and Neola II. A great shout of rejoicing went up at Newport, but it must be remembered that the Rhode Island boats were mere shells and could have been carried on the decks of the more wholesome boats of the New York Yacht Club class.

Through the following years some of the thirty-footers changed hands, some passing out of the Club. Anemone Jr. went to Alfred G. Vanderbilt and was renamed Caprice; Cara Mia was sold to the Scotts in Oyster Bay; Carlita went to Frank Swan; Dahinda to G. Emlen-Roosevelt; Linnet to Hartford; Maid of Meurdon to C. W. Matheson, renamed Melody; Nautilus sold to Hartford; Neola II to Ralph Ellis, renamed Hera II; Oriole to Hartford, and Tebasco to Johnson DeForest, renamed Nepsi.

But a sufficient number, twelve, remained under the burgee of the New York Yacht Club to discredit the statements early in the season that the "thirties" as a class were of the past. Nothing could have been farther from the facts than that. The class was as prominent in the regattas of the spring and summer as it ever was, and the various sloops thereof revealed undiminished ability in the way of making trouble for craft of higher rating. The record of the class last year, in which three or more sloops started, thirty-nine races in all, is as follows:

	First Places	Second Places	Third Places	P.C.		First Places	Second Places	Third P'laces	P.C.
Alera	8	15	6	82.85	Phryne	3	3	3	57.80
Adelaide	7	6	6	77.41	Carlita	1	0	0	51.99
Minx	6	2	6	72.68	Caprice	0	0	0	44.44
Nepsi	5	3	3	67.50	Dahinda	0	0	1	44.08
Atair	2	5	6	58.42	Pintail	0	0	1	24.83
Banjai	3	3	3	58.08	Hera II	0	0	0	14.80

Adelaide II won the Championship Cup of the New York Yacht Club One-Design Class, donated by owners in this class, and she also won the Sound Championship pennant.

	Firsts	Seconds	Thirds		Firsts	Seconds	Thirds
Adelaide	5	5	3	Atair	1	2	3
Alera	4	6	4	Phyrne	1	2	0
Minx	4	4	2	Carliter	1	0	0
Nepsi	3	2	3	Dahinda	0	0	1

George A. Adee, Jr., owner of this sloop, sailed her throughout the season with two amateurs, a devotion to the sport which speaks for itself and a tribute to the amateur spirit which exists among members of the New York Yacht Club.

Motor Boat Types

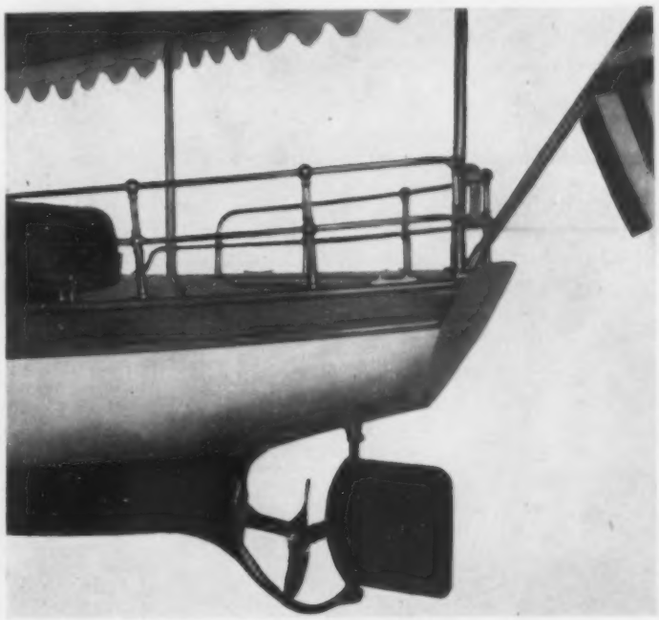
By E. T. KEYSER

Photographs by Edwin Levick

THE remarkable progress in motor boat designing is so rapid, that it not only allows the man who wants to be up to the minute and is willing to pay for the privilege to gratify his desire, but it also allows the other man who must consider his pocket-book more closely, to get no end of enjoyment out of the craft passed down along the line by the first individual, and at a cost which puts it within the reach of a very moderate income.

And this, too, simply at the sacrifice of features that only the last season or two have shown to be desirable, but not absolutely necessary to enjoyment afloat.

The raised deck forward, in combination with a trunk cabin aft, seems to be the prevailing type for the coming year in cruisers sufficiently large to admit of this style. In the smaller of these craft the square trunk follows directly the raised forward deck. In the larger craft, a bridge deck is usually placed between the two, giving additional stiffness and strength and affording protection to the steersman.



STERN OF ELECTRIC LAUNCH. PROTECTION TO SCREW AND RUDDER AND LARGE AFTER DECK ARE THE PROMINENT FEATURES.

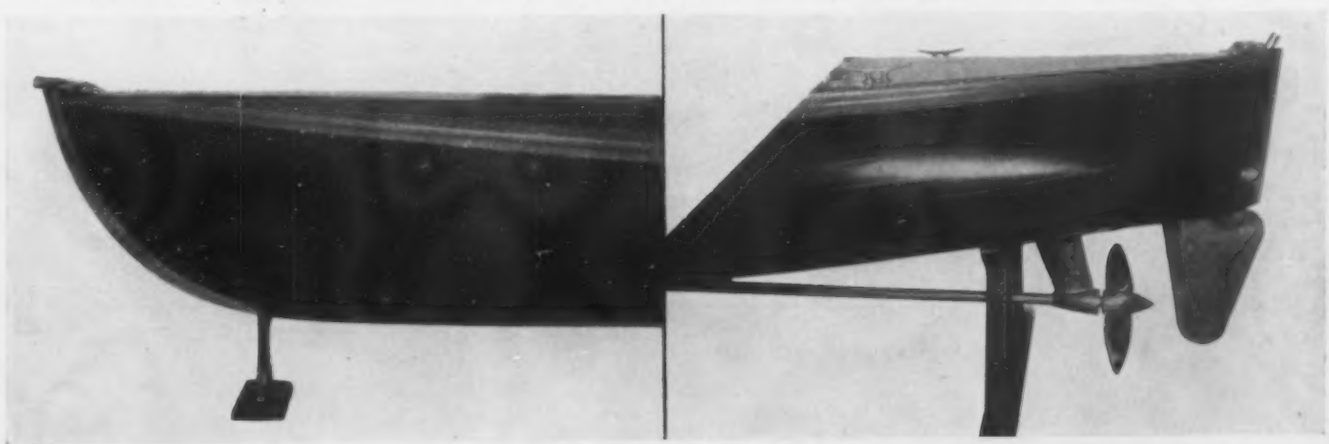
The present tendency, as shown by exhibits at the motor boat shows of this winter, is along the line of reduced draught in cruising craft. None of the large cruisers shown drew over three feet of water, and this lightness of draught enables a craft to negotiate many waters which would otherwise be barred, and opens up a good deal of good shooting and fishing territory comparatively unvisited before. Hunting and fishing, by the way, are in these days considerations rapidly increasing in importance to the motor boat owner.

It should not be forgotten, however, that extremely shoal draught cannot be obtained except at the sacrifice of a certain percentage of seaworthiness, which decreases with the decrease of the draught and the increase of freeboard. There seems, in fact, to be an inclination among cruisers to add freeboard and decrease the draught until what the craft should have beneath her for steadiness is piled up in freeboard at the bow, with the idea of making her dry.

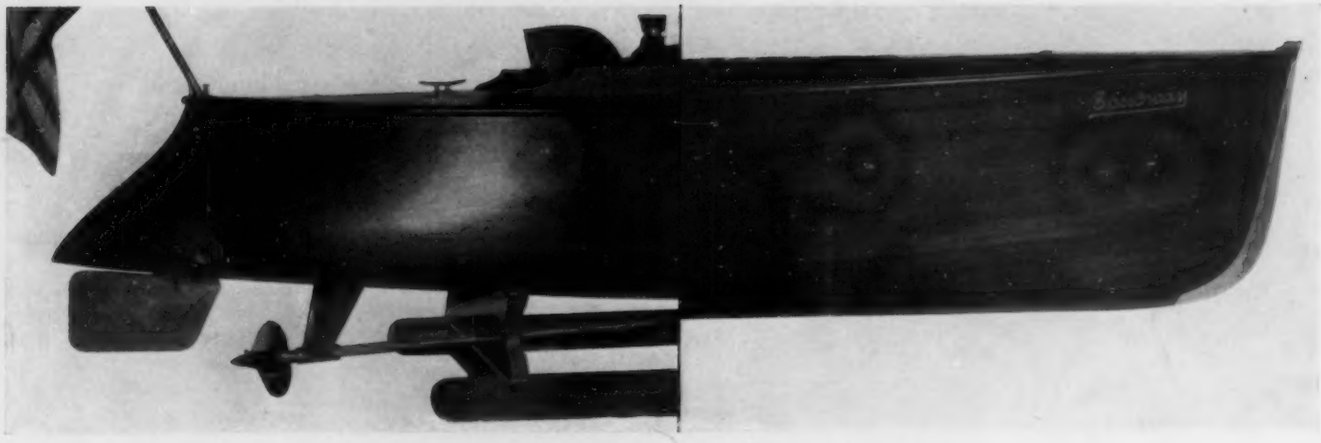
Now, a boat that is expected to tackle enough outside water and rough weather to render a high freeboard necessary, or even desirable, will, by the same condition, be the better for enough draught to keep her high sides and top hamper from rolling under when she does strike it good and strong and must stay and fight it out. Of course, a deep boat won't let you go where the shoal-draught craft can slip in, but if the launch must be shoal there is no necessity for building her up until she looks like a miniature battleship.

It all fines down to the old, old point that one cannot, never could, and never will get the all-round perfect motor boat, equally adaptable to outside rough weather work and to running wherever it is just a trifle damp. If it is necessary that one must have something that can cruise in water of limited depth and not hang up en route, get a shoal-draught cruiser, with a moderate amount of her projecting into the air, and then if you must occasionally tackle the outside waters, do it with due care and forethought and be ready to run for shelter unblushingly when things begin to look nasty.

On the other hand, if your cruising waters are such that a high freeboard is necessary, don't be afraid of balancing it with



BOW AND STERN OF ELCO PEERLESS.



BOW AND STERN OF SPEEDWAY.

something tangible in the way of an under-water body and take good-naturedly the necessity of being careful when you occasionally use her in shallow waters. The high freeboard is a good thing under certain conditions; light draught is also another good thing under other conditions, but when these two good things are combined, the result is apt to be something not nearly one-half as good as either.

There is another tendency to be noticed among the boats for the coming season. It is the attempt, more or less successful, to provide a place for a man aboard launches whose greatest beauty and utility lies in their being capable of being used as single-handers.

Evidently the cruising men are about to investigate the servant problem and try out the matter for themselves. Just why the average cruiser, who was willing to cruise under sail without hired help, finds a servant necessary to a motor boat, is somewhat of a puzzle. In the close quarters of a forty-footer, or anything under that size, a servant, be he cook or sailor, must of necessity be uncomfortably close at all times, and especially so at night and in rainy weather.

And yet, that engineer's berth in the galley seems to be one of the features of the new craft.

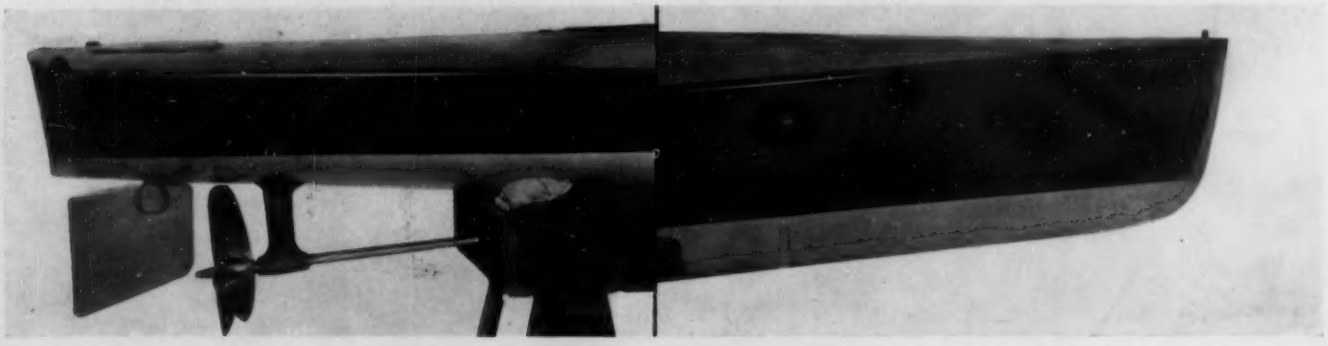
Sometimes it is out of the way and in the form of a seat; sometimes it is a folding berth, which drops down into the passage to the companionway, effectually blocking either entrance or exit.

Of course, a paid hand is convenient when it comes to hoisting anchor, polishing up brasswork and cleaning up, but even then it is to be doubted if he is not, on a small craft, more trouble than he is really worth.

Now that the entire cruising world has apparently settled upon either the raised deck or hunting cabin trunk as the proper thing, a western builder comes to the fore with an energetic protest against the use of anything but the old-fashioned standing roof with large glass side windows. He bases his advocacy of the older type on the fact that it is cooler and better lighted, and states, as a further reason, that not one out of ten who use a hunting launch really use her on waters where the lower port-lighted forms of trunk are really necessary.

The builder in question showed the courage of his convictions by exhibiting a remarkably handsome cruiser, with self-bailing cockpit and all of the modern cruising conveniences, but with a rather high glass-sided cabin trunk house. She was certainly a beauty, light, airy and comfortable; but much of the western concern's arguments in favor of the old-fashioned high standing roof applies particularly to the West, where small lakes and moderate-sized rivers afford sheltered cruising, which power-boaters along the coast may only occasionally enjoy between runs on larger and more open water.

As a matter of fact, we are departing widely from the "good old days" when a power boat was a "launch" and all of them looked very much alike except in the matter of size, and when those who bought them used, with more or less success, to put the one general type and model up against all sorts of different kinds of service. In those days the purchaser bought sixteen, eighteen or more feet of launch, with or without awning, standing roof or cabin, as he happened to be financially able to stand the strain, and his pocket-book really had more to do with craft and equipment than the uses to which she was to be put, and the long, narrow, high-cabined, fantail boat was put through waters for which she was never intended. She generally came out all right, thanks to her honest construction and the grit, skill or dead good luck of her skipper, but she was not an ideal type for many of the uses of a modern power boat. To-day we have progressed to the point where each particular form of water sport has developed its own particular type of hull, while the engine builders have evolved specialized types of motors, each designed to give the best results under certain working conditions.



BOW AND STERN OF DEN II.

I don't know of any better illustration of this than the series of photographs of bows and sterns taken at the New York Show. The stern of the electric launch shows a modification of the old fantail with the flat transom. As will be seen, this allows of a broad after-deck, the width of which carries to the extreme stern. This makes the after-deck a roomy lounging place, which, fitted with cushions, will accommodate several passengers in what would be waste space in another type of stern. Not being intended for great speed or service on rough water, the fantail, with its great accommodation space, is particularly appropriate to this class of launch, and the solid skeg and propeller guard protects the wheel from damage by sunken logs, rocks or other obstructions so often found in small rivers or along lake shores.

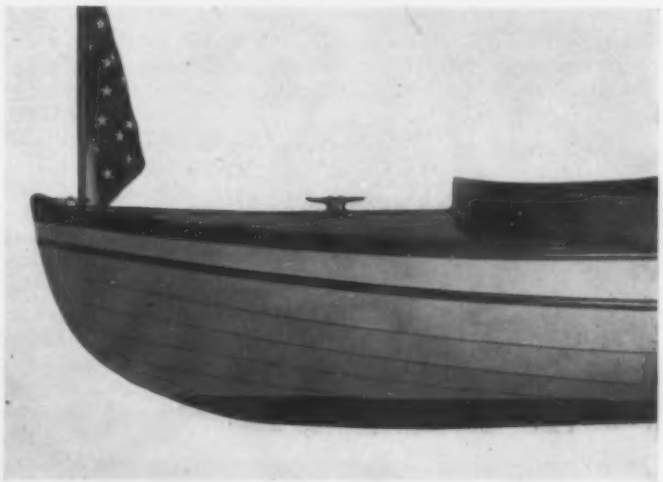
The deck room aft is of no importance or particular value in a yacht tender, but stability and a rudder which is always accessible and which may be instantly shipped or unshipped is vital, so the stern of the Gas Engine & Power Co. and Chas. L. Seabury & Co., Con., tender shown, differs radically from that of the electric launch. The flat transom allows the use of a rudder with hangings on the outside. With plenty of water at both yacht and landing stage, there is little need for protection to propeller wheel or rudder, but she does want all the draught possible for steadiness in a seaway, and a glance at the photograph will show how this is given.

The bow of a smaller tender built by the same concern and on the same lines and powered with a naptha engine, shows that the craft draws sufficient water to make her steady, while her broad stern gives her lifting power in a following sea, and the sharp bow puts her through a chop without undue splashing. The Elco Peerless of the Electric Launch Co. shows a sharp modified clipper bow, quick deadrise and with enough reverse curve to throw the spray away from, instead of into the boat. The idea of the flat-bottomed sterns with the great beam at the water line is to oppose all possible resistance to the tendency of the rapidly rotating and powerful propeller wheel to pull down the stern and raise the bow, as would be the case with a speed boat made with the fantail stern of the electric launch or the sharply rounded deadrise of the tender already illustrated.

The Speedway, built by the Gas Engine & Power Co. and Chas. L. Seabury & Co., Con., has a bow almost plumb, a rather concave curve at the upper streaks forward and a flat keel. She is a cutting knife, dividing and throwing down the water forward, and has the regular torpedo stern, with greatest beam at the water line and extending sufficiently aft to house the balance rudder. The rake of the propeller shaft and the position of the exhaust indicate just how little of her after-body is submerged.

The Den, built for speed only, has an almost perpendicular bow, slightly rounded under the forefoot and with more deadrise aft than the other racers illustrated. She has a rounded transom, terminating in a V at the keel; her balance rudder is housed entirely under the hull, of which more is submerged aft than in either the Speedway or Elco hulls.

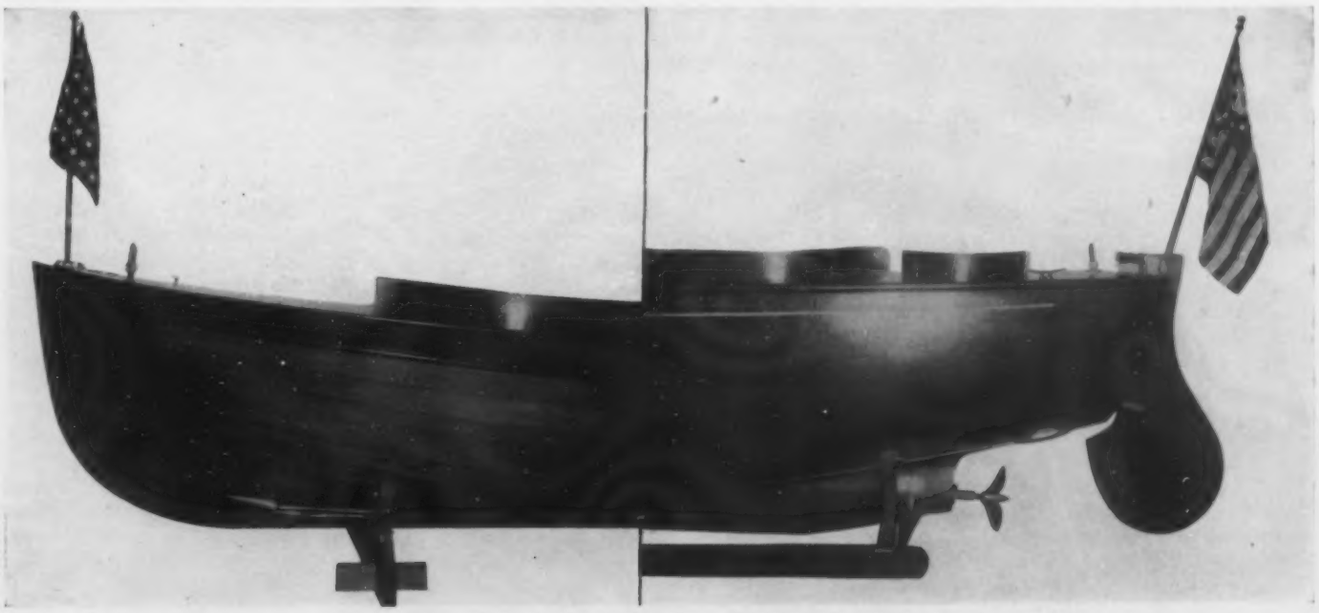
In the dory of the Atlantic Company, a totally different shape of bow is shown. In this case it was necessary to secure a form



BOW OF ATLANTIC DORY.

which would allow of easy beaching, dryness in a choppy white-capped sea without undue sacrifice of speed, the first is secured by the cutting away of the forefoot, the second by a concave curve to the upper streaks, while the latter is obtained by means

(Continued on Page 114.)



BOW OF NAPTHA LAUNCH AND STERN OF SPEEDWAY YACHT TENDER.

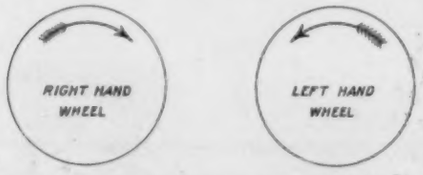
The Propeller

ITS ORIGIN AND EVOLUTION INTO SPECIALIZED TYPES

By PHILLIP J. OVERMAN

Illustrations by the Author

RECENTLY not a little stir was made among nautical men by the exhibition of a new form of propeller. Its general idea was a horizontal hinged plate, which could be driven up and down by cylinders so placed as to cause a series of waves to pass along the plate, after the manner of a snake swimming, except that the waves were vertical instead of horizontal. Great things are expected from it. The system has some promising features, but it is probably not applicable on a large scale. Twenty-five or more years ago a friend applied something similar to a boat and got good results. He had on each side of his boat two boxes without ends. They were under water. In each was a flat blade, the whole length of the box. The blades were moved up and down by a rod pivoted one-third from the forward end. The boat was moved forward with great swiftness. But suppose we imagine something of the same kind applied to a steamer. On the same proportions, one of our coast steamers would have two boxes ten feet square and one hundred feet long under water on each side. In each there would be a blade ten feet wide and one hundred feet long. Thirty feet from one end there would have to be an attachment for the rod by which the plate could be worked. Such an apparatus would be more bulky than a paddle wheel and more liable to damage. The long, flexible blade under a vessel would be equally bad.



RIGHT AND LEFT HAND WHEELS. STANDING AT STERN, LOOKING FORWARD. RIGHT HAND WHEEL, THE TOP OF WHEEL TURNS OVER TO THE RIGHT. LEFT HAND WHEEL, THE TOP OF WHEEL TURNS OVER TO THE LEFT. THE RIGHT HAND WHEEL TURNS FROM PORT TO STARBOARD. THE LEFT HAND WHEEL FROM STARBOARD TO PORT.

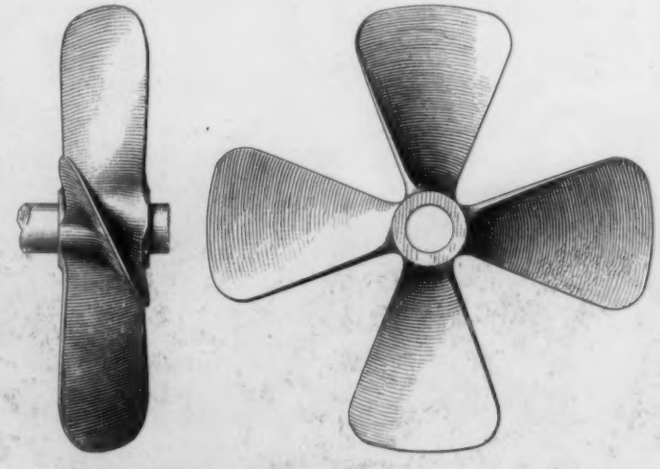
Although not quite as much in the way as one placed on the sides, it would take up more space and be more liable to injury than a propeller wheel. Inventions of this kind are usually made by those who are ignorant of the functions of a propeller and of the principles involved in driving a ship through the water. The propeller wheel of to-day consists of two, three or four blades set about a hub. Each blade is a small portion of a screw thread. If the blade were continued in an edgewise direction it would make a complete twist about the shaft. The distance measured along the shaft in which it would make one revolution is called the "pitch" of the propeller. The part next the hub does little work and hence it is found advantageous to make the hub of considerable size and plant the blades upon it. The three-bladed propeller is rather more common for passenger vessels than those of two or four blades. The four-bladed wheel is rather a favorite with the tugs and vessels that have towing to do.

When screw was first applied to the propulsion of steam vessels, the idea prevailed that the wheel was a screw and worked in the surrounding water after the manner of a solid screw in a nut. Some of the early propeller wheels were made with blades making one whole revolution. If we remember rightly, Colonel John Stevens' boat had two propellers in which nearly a whole revolution of the thread was used.

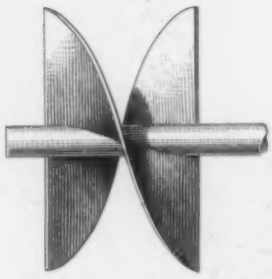
There is not space to go into the whole theory of screw propulsion in the present paper, but it is sufficient to say that a new idea has gradually come to be accepted. The wheel is a pump and it acts mechanically in sending the ship forward in the same way as the paddle wheel or oars or paddles. It puts in motion a quantity of water in a direction opposite to that of the hull of the vessel. The greater the quantity of water put in motion with the least imparted motion the better.

As a pump, for the purpose of imparting a small amount of motion to a large weight of water, the propeller wheel is very efficient. The best of wheels of this class have economic results which are close to their theoretic efficiency.

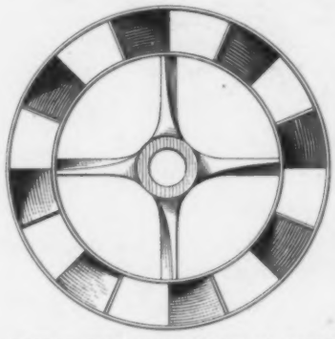
The propeller has some curious features. In the early days, when they first began to put steam into men-of-war, a 120-gun ship of the old type was fitted with a screw. Careful observations showed that the ship sailed further with a certain number of revolutions than she would have done if her propeller had been working in a solid nut. For many years there were engineers who denied the fact that there could be such a thing as "negative slip." They argued that there must have been some errors in the way that the measurements were made. Even after these had been carefully verified and the fact was proven, there were those who did not assent. But when a metal screw was made to have a negative slip by revolving the nut, scientific people began to yield. It was then a long time before the reason was understood. But it was found that the full stern dragged the water after the ship. Her lines were so full that the water did not have a chance to flow in and fill the space left as the ship moved forward. When there was no slip, or a "negative slip," it was proved that there was much more power used than in the ordinary work. "Slip," it will be understood, means the difference between the distance forward which the screw propeller would travel in a solid nut and the distance which the ship actually sails. This may be as small as ten per cent. or as high as twenty-five per cent. With paddle wheels the slip is usually twenty-five per cent. The



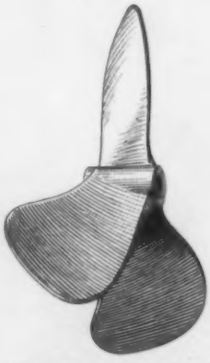
SIDE AND REAR VIEWS OF FOUR-BLADED WHEEL FOR FERRY BOAT, CAST IN ONE PIECE. WIDE BLADES GIVE GOOD STARTING AND STOPPING POWER. FOR LONG-CONTINUED HIGH SPEEDS, NARROW BLADES SHOULD BE USED.



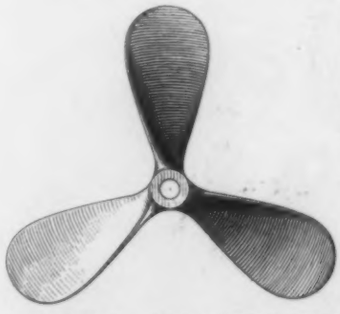
FIRST FORM OF PROPELLER. A COMPLETE TURN OF ONE OR TWO THREADS. SOMEWHAT SIMILAR TO THE PROPELLER USED BY COLONEL STEVENS IN 1804.



SKETCH FROM MEMORY OF AN EARLY FORM OF PROPELLER WHEEL USED BY JOHN ERICSSON BEFORE THE THEORY OF THE WHEEL WAS UNDERSTOOD. A NUMBER OF BLADES ENCLOSED BETWEEN TWO RIMS, CARRIED BY TWISTED SPOKES.



THREE-BLADED RIGHT-HANDED SOLID LAUNCH WHEEL. SIDE VIEW. SMALL WHEELS OF THIS KIND, FOR SALT WATER USE, ARE ALWAYS OF BRONZE.



THREE-BLADED RIGHT-HANDED SOLID SMALL LAUNCH WHEEL. REAR VIEW.

wheels making that much more distance than the vessel. Many years of experience has cut away the area of the screw blades until, at the present time, for speed they are but a small proportion of the complete circle. For towing purposes they are wider.

The water to supply the place of that thrown aft by the screw or paddle does not come to them along the vessel's length. Both screw and paddle wheel may be said to dig a hole in the water. The water to take the place of that which they throw aft comes from each side and below. In the case of a paddle wheel steamer, there is a depression on each side of the vessel of a saucer shape, or, more correctly speaking, of half a saucer, for the side of the ship is in the deepest point of the depression. In the olden time, the builders took some advantage of this and placed the paddle wheels far forward, so that there was a tendency for the hull to slide forward into the pit made by the wheels. Probably a considerable gain was made, for even the latest of paddle boats have their wheels well forward of the center.

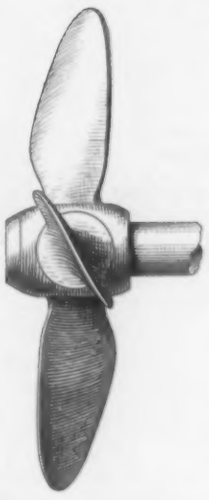
The propeller, when in operation, makes a depression of a saucer shape in the surface of the water. The ship's stern occupies approximately the center of this, and the tendency of the stern is to slide backward into this cavity. It is for this reason that the screw propeller is at a disadvantage as a means for driving a vessel through the water. It was found by Froud in England, when making experiments on models in a tank, that when a certain model was towed at a given speed the resistance amounted to a given quantity. A suitable propeller wheel for driving the model was then carried under the stern in its proper place, but in no way touching it, and then by proper apparatus was driven at the number of revolutions per minute necessary for the speed. It was found that the power needed for towing was immediately increased so soon as the propeller began to revolve. In a large vessel this amounts to a considerable figure. The explanation, of course, was the tendency of the vessel to slide backward into the hole made by the screw.

This curious fact explains why a large engine, even as an auxiliary, is needed by a large vessel. A ten horsepower launch may be able to tow a vessel at two or three miles per hour. Put the launch engine into the vessel herself and start it going and she simply slides backward. An engine of perhaps two or three hundred horsepower is needed to make the speed and keep the ship from sliding into the hole excavated by her screw.

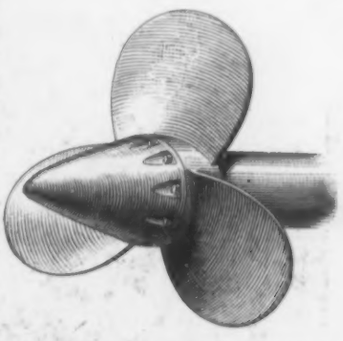
It has been proposed to put the propeller at the forward end of the boat, but here another difficulty is encountered. The water started backward by the wheel strikes the hull—and a propeller at the bow is at least ten per cent. less effective than at the stern. This has been found one of the drawbacks in the use of ferry boats with a propeller at each end.

The fact of a hollow being formed at the stern is the reason why fast launches settle when under way, or "squat," as it is forcibly but somewhat inelegantly termed. In some of the older boats this was so great as to throw all the fine forward lines of the boat out of water. It was to overcome this tendency that the broad torpedo stern was designed. This gives a wide bearing and good displacement at the point where the propeller is pumping the water from beneath the stern. In placing the wheel far under the boat, near the center in fact, a gain is made, because the stern then takes a bearing to a certain extent upon the after side of the depression.

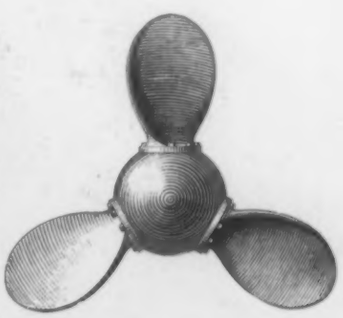
House-boat owners have discovered that a small low-powered launch will tow them along, at a rate of speed which would require a horsepower many times greater if the engines were installed in the house-boat itself. This explains how it is possible for the snorting, puffing little tugs to handle tows, made up of craft, which would otherwise require individual engine equipment almost equal to that of the tug itself.



FOUR-BLADED FEATHERING WHEEL. BY MEANS OF A ROD WITHIN THE HOLLOW SHAFT, EACH BLADE IS TURNED THROUGH 45 DEGREES, REVERSING ITS ACTION ON THE WATER, WHILE STILL REVOLVING IN THE SAME DIRECTION AS BEFORE. THE ENLARGED HUB GIVES SPACE FOR ACCOMMODATION OF THE REVERSING MECHANISM.



ROUGH SKETCH OF ONE OF THE MAURETANIA'S FOUR PROPELLERS. THE BOSS IS LONG AND DIAMETER ABOUT ONE-THIRD THAT OF THE WHEEL. THE BLADES ARE NEARLY ROUND.



SKETCH OF TWENTY-FOOT DIAMETER PROPELLER, SUCH AS ARE CARRIED BY LARGEST TWIN-SCREW STEAMERS. THE CENTRAL PART, HAVING LITTLE EFFICIENCY, IS IN THE FORM OF A LARGE BOSS, TO WHICH SEPARATE BLADES ARE SCREWED, THUS FACILITATING REPAIRS.

The Call of The Deep.

By THEODORE P. CLEVELAND, M.D.

Fill the flowing bowl with Santa Cruz rum,
Come, sailors, come with me,
And we'll all sit down to the festal board,
For a banquet of the sea.

We'll drink to-night to the grandest sight
In the world to you or me;
A *full rigged ship* with all sail set
And the trade winds blowing free.

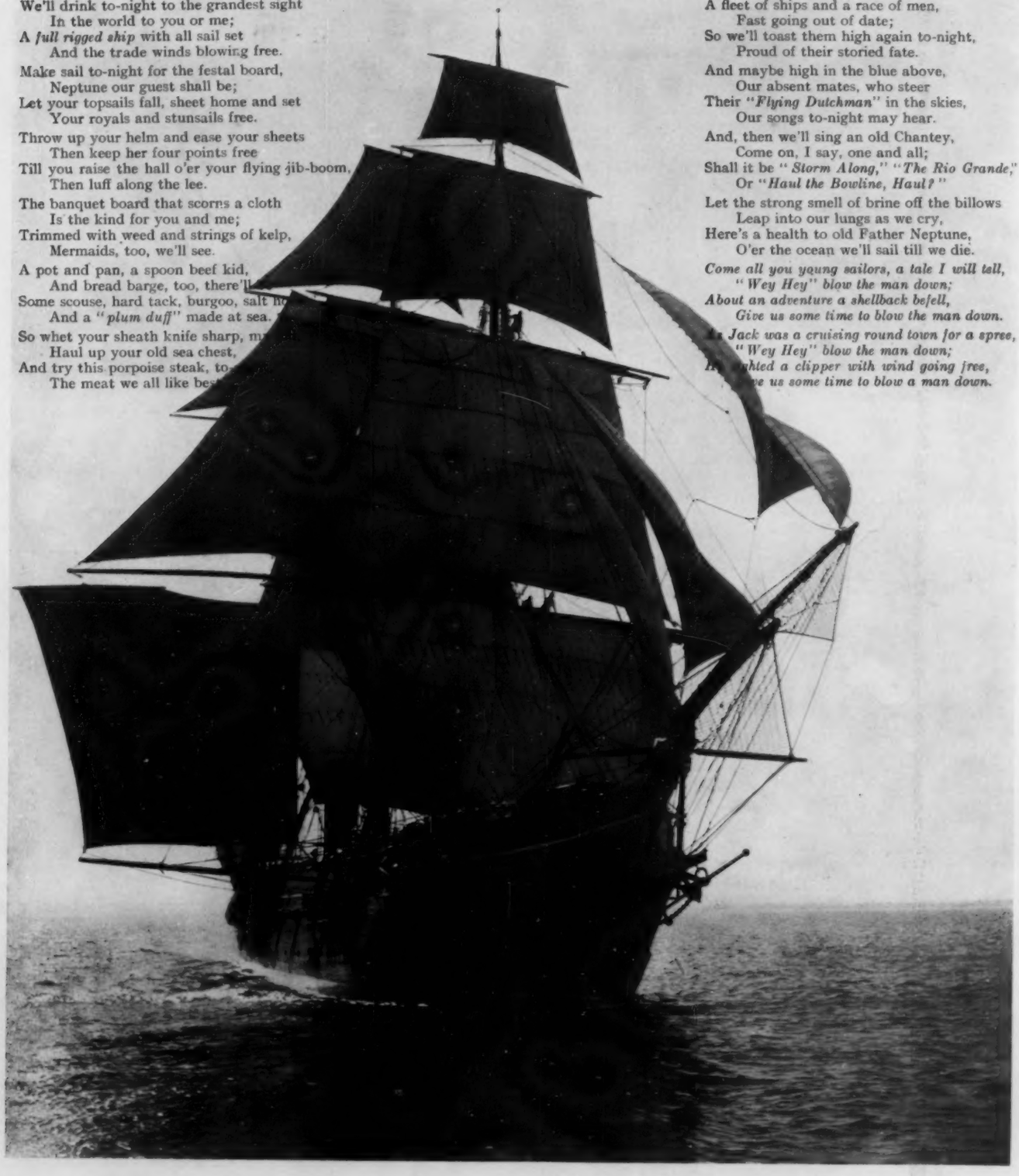
Make sail to-night for the festal board,
Neptune our guest shall be;
Let your topsails fall, sheet home and set
Your royals and stunsails free.

Throw up your helm and ease your sheets
Then keep her four points free
Till you raise the hall o'er your flying jib-boom,
Then luff along the lee.

The banquet board that scorns a cloth
Is the kind for you and me;
Trimmed with weed and strings of kelp,
Mermaids, too, we'll see.

A pot and pan, a spoon beef kid,
And bread barge, too, there'll
Some scouse, hard tack, burgoo, salt
And a "*plum duff*" made at sea.

So whet your sheath knife sharp,
Haul up your old sea chest,
And try this porpoise steak, to
The meat we all like bes



Fill the flowing bowl with Santa Cruz,
And we'll splice the old main brace;
We'll drink and sing songs of the sea
Well known to the ocean race.

A fleet of ships and a race of men,
Fast going out of date;
So we'll toast them high again to-night,
Proud of their storied fate.

And maybe high in the blue above,
Our absent mates, who steer
Their "*Flying Dutchman*" in the skies,
Our songs to-night may hear.

And, then we'll sing an old Chantey,
Come on, I say, one and all;
Shall it be "*Storm Along*," "*The Rio Grande*,"
Or "*Haul the Bowline, Haul?*"

Let the strong smell of brine off the billows
Leap into our lungs as we cry,
Here's a health to old Father Neptune,
O'er the ocean we'll sail till we die.

Come all you young sailors, a tale I will tell,
"Wey Hey" blow the man down;
About an adventure a shellback befell,
Give us some time to blow the man down.
As Jack was a cruising round town for a spree,
"Wey Hey" blow the man down;
He sighted a clipper with wind going free,
Give us some time to blow a man down.

BAY CITY "CATS" RACING IN SAGINAW BAY.

The Home of the Speed Boat

AT BAY CITY THEY NOT ONLY MAKE BOATS AND ENGINES, BUT RACE THEM, TOO—ON THE DAY OF A MOTOR RACE, EXCITEMENT IN THE MICHIGAN LAKE PORT IS AT FEVER HEAT —SAILBOATS FITTED WITH ENGINES ARE ALSO POPULAR—PLANS FOR NEXT SEASON—A NUMBER OF NEW POWER CRAFT ARE BEING BUILT AND SEVERAL OF THEM PROMISE TO BE RECORD BREAKERS—GENERAL, WONDER, ARROW AND BUZZ SAW WILL MAKE GREAT RACING

By GLEN B. HILLER

Photographs by the Author

FEW rivers or harbors on the Great Lakes present such natural advantages for motor boating and sailing as Saginaw River and Saginaw Bay, with Bay City, Mich., conveniently located near the mouth of the river and numerous summer resorts lining the shores of the bay for miles.

Yachting has been the legitimate sport of Bay City pleasure seekers for many years past, and few cities of sixty thousand inhabitants can boast of as many boats with "kickers" as can the "Queen City of Lake Huron," with its three hundred motor boats.

Conveniently located, numerous boat-building concerns have established a growing business, justly giving Bay City its well-earned title of "The home of the boat pattern business." A dozen firms are now sending boat patterns, knock-down frames, besides complete boats, to all points of the globe. They are also able to fit the boats ready for shipment with a local engine, which has demonstrated its ability in many of the fast boats and which has a well-established reputation.

In close proximity to the extensive pine and oak forests which supply the principal woods for launch making, Bay City is destined to become one of the leading boat manufacturing cities of the world. The sport is being furthered and kept up by the earnest efforts of the members of the Bay City Boat Club, an organization composed of about two hundred and fifty members, with a beautiful club house on the Saginaw River, but a short distance from the bay and at one end of the city. For many years the Club has advanced the sport, and interest has always been at fever heat regarding yachting, the races, its hardships and its pleasures.

A feature of the Club is a fleet of "cats," sixteen-footers, built from one design. "A race of the cats" is always looked forward to with great interest. Contests are held each Saturday afternoon during the summer season and are participated in by from twelve to sixteen of the craft. The course extends over the bay, three legs, with the start and finish in front of the club house, which is built over the water. So close are some of the finishes, that a tie is frequently declared between as many as three of the boats in the fleet.

Many of the owners of the catboats installed 1½ horsepower engines the past season. For this reason, and in order that no boat obtain an advantage in a race, a ruling was put in force by the club officials that no "cat" could become a contestant in the weekly events unless it was equipped with one of these engines (all of the same make, weight and horsepower). The company which has the contract for the building of the "cats" is now working on a dozen more of the same model and which will be added to the fleet in the spring, thus making nearly thirty boats belonging to club members and all equipped the same, even to the engine. The boats are beamy and comfortably carry fifteen passengers.

HOME OF THE BAY CITY YACHT CLUB.

Hardly a year passes that the Bay City Boat Club has not been represented by an entry in the big regattas of Tawas, Put-In-Bay, Toledo, Chicago and Detroit. The championship cups have often reposed on the mantels of the Club and incited the admiration of the many visitors.

Besides being enthusiastic sailors, the majority of the club members have become owners of launches, cruising yachts, hunting cabin cruisers, and last but not least, speed boats of no mean ability, whose demonstrations have set their mark well towards

the records and performances of top-notchers. Interested in speed boats, the Club and other associations of like kind claim the distinction of having promoters of the sport whose efforts have thus far been so successful that with the summer season again approaching, interest has so far been promoted that a large fleet of racing boats will be in evidence for 1908 honors. Hidden away up in one corner of the map, few realize the fact that Bay City is producing some of the fastest motor boats that ever contested for records, and when the warm sun again shines on the waters of Saginaw Bay, some of them at least will demand attention from record breakers in other localities.

Arrow, the 26 miles an hour flyer, winner of the Put-in-Bay Regatta, will again be entered against all comers. Several minor changes will be made during the winter that may possibly increase the already high speed which it has attained. Secret, its old rival for speed honors, has been sold to Indiana parties, who will use her to conquer other foes on Lake Michigan. A new engine was installed prior to shipment. It is of the same make and horsepower as the former engine that drove her to many victories, so that there is little probability of the boat doing much better than her record of the middle of the summer—making a mile in 2 minutes 18 seconds.

THE SLOOP ST. ELMO. SHE IS IN THE 21-FOOT RESTRICTED CLASS. BUILT TO DEFEAT SPRAY. SHE FAILED, IT IS SAID, BECAUSE OF BAD MANAGEMENT AND ACCIDENTS.

Wonder, a new model and different from the rest, will be launched in the spring. The boat is built of steel plates, one-sixteenth of an inch in thickness, and though the boat is 27 feet in length and 3 feet 6 inches beam, its total weight is but 420 pounds. Satisfied that their ideas (which, by the way, were original) were correct and that great speed could be attained by a boat built after this fashion, the builders first constructed a rough model, without even taking the pains to smooth out the lines (so eager were they to give the boat a trial). It was completed and equipped with the old Secret engine, a 15 to 20 horsepower affair that has suffered two years' wear and has been sunk several times. Even at this disadvantage, the results were more than equal to the builders' expectations, the boat making a mile in 2:19. After a careful series of trials, this time was the fastest made, but it incited the builders to construct more carefully another steel boat of the same model, but with better lines, construction and finish. The boat will not be completed ready for the water till the first part of next season, but will be one of the first boats for use this spring and will be equipped with the same type of engine that drives Arrow, Secret and others.

WONDER. SHE WAS MADE BY AN IRON WORKER, WHO INTENDED HER FOR A MODEL OF A BOAT NOW BUILDING. SHE HAS MADE A MILE IN 2.19. HER ENGINE IS 3-CYLINDER 20 HORSEPOWER.

What lovers of the racing game declare is the record breaker, was driven over a mile course, November 24th, at the remarkable time of two minutes and four seconds, which figured out a speed of 29½ miles an hour. This boat is named General and is 39 feet in length, the beam being 4 feet 3 inches. Its trial had been looked forward to by sportsmen for many months, and the speed developed gives her beyond question the title of the fastest boat on the Lakes and with a few exceptions, the world's championship for boats under forty feet in length. It has been under construction for the past eight months, the builder, George Miskin, sparing no expense or pains in finishing the boat. Every detail was given his personal attention, and when the boat was finally ready for the water it was conceded to be the best constructed boat ever built in this locality. The boat is of peculiar model, being totally different from any of the others. The beam measurement is taken at the stern, and from this point forward the hull gradually tapers to the bow, wedge shape. Many original ideas are wrapped up in General. The wide construction of the stern renders it impossible to overturn the boat. From the stern forward, for a distance of twelve feet, the boat merely rests on the water, even though a tank holding fifty gallons of gasolene is placed therein with the calculation of raising the bow out of water to a certain extent, leaving only about twenty feet in the forward center of the boat that draws any water to speak of. The hull is of clear selected white pine, the interior is of red cedar, and the finishing in oak. Copper nails and screws are used entirely in the hull. The double construction of the hull renders it possible to install almost any weight of engine with safety. The hull weighs but 520 pounds.

The interior is divided into four cockpits. The first or forward cockpit contains the engine. The second is occupied by the engineer, the third for the helmsman, who handles the boat by an automobile steering device, and the stern pit is for pas-

A RUN WITH SPINNAKER TO PORT. BOREALIS, A NEW 21-FOOTER, REMARKABLY SUCCESSFUL IN THE FEW RACES IN WHICH SHE SAILED LAST SEASON.

sengers, of whom the space permits three or four. The boat is painted with copper bronze. The engine has six cylinders, forty to sixty horsepower, and in many respects is different from any engine yet constructed. A peculiar feature of the engine is, that it requires but a light and very small flywheel, and, in fact, on the testing stand ran like a sewing machine with the flywheel detached, and, with the wheel attached, turned up a 17-inch Key West propeller 1,650 revolutions per minute. It develops its horsepower at 600 to 900 revolutions per minute. Installed in General, the flywheel is but fourteen inches in diameter and weighs less than four pounds and is made almost entirely of aluminum. The six cylinders are strapped together by strips of steel to avoid shaking. The base is of aluminum. The stroke and bore are 4½ inches.

The simplicity with which the boat is handled is one of the best features. A steel standard is placed aft of the engine, in the second cockpit of the boat. Here the engineer controls the whole engine, the timer being conveniently placed thereon, also an oiling device, from which individual tiny brass tubes lead to all parts of the engine, and as no grease is used whatever, the exterior of the engine is always in a cleanly condition. Three electric push buttons are placed on the standard. No. 1 works cylinders 1 and 4, No. 2, cylinders 2 and 5, and No. 3, cylinders 3 and 6. No matter where the crank stops, one of the three buttons will start the engine without the customary trouble of using a crank.

The wonderful speed attained, that of 29½ miles an hour, was only what enthusiasts predicted of the General, some prophesying a speed of 35 to 40 miles an hour. More than 30 miles an hour is expected of the boat, as several changes have been found necessary before she will be perfect. When this record was made, the engine was somewhat stiff, being new, and proper adjustment of the carburetors was out of the question because of the coldness of the weather. E. R. Walker of Detroit has entered General in the races at Palm Beach, Fla., which start February 21st. There the boat will buck up against some of the fastest boats in the world and will have an opportunity to show what is in her. Mr. Walker is the owner of several fast boats, some of them of the Secret design.

Another 1908 "speeder," Mystery, will be a contestant for speed honors among the others. This is the smallest boat of the racers, being but 26 feet long with a 3-foot beam. A 20 horsepower Ferro engine furnishes the power. Chas. Trudell, former owner and builder of Secret, promises to turn out another flyer after the Secret model, but with many changes for the better. During the past season he has built and distributed ten Secret hulls to sportsmen on the Great Lakes, Hudson River and the South.

GENERAL, THE SWIFTEST BAY CITY PRODUCT. SHE HAS MADE NEARLY THIRTY MILES AN HOUR.

Many boats now in the process of construction will be finished for 1908 use. Their quantities are as yet unknown, their size ranging from 27 to 44 feet.

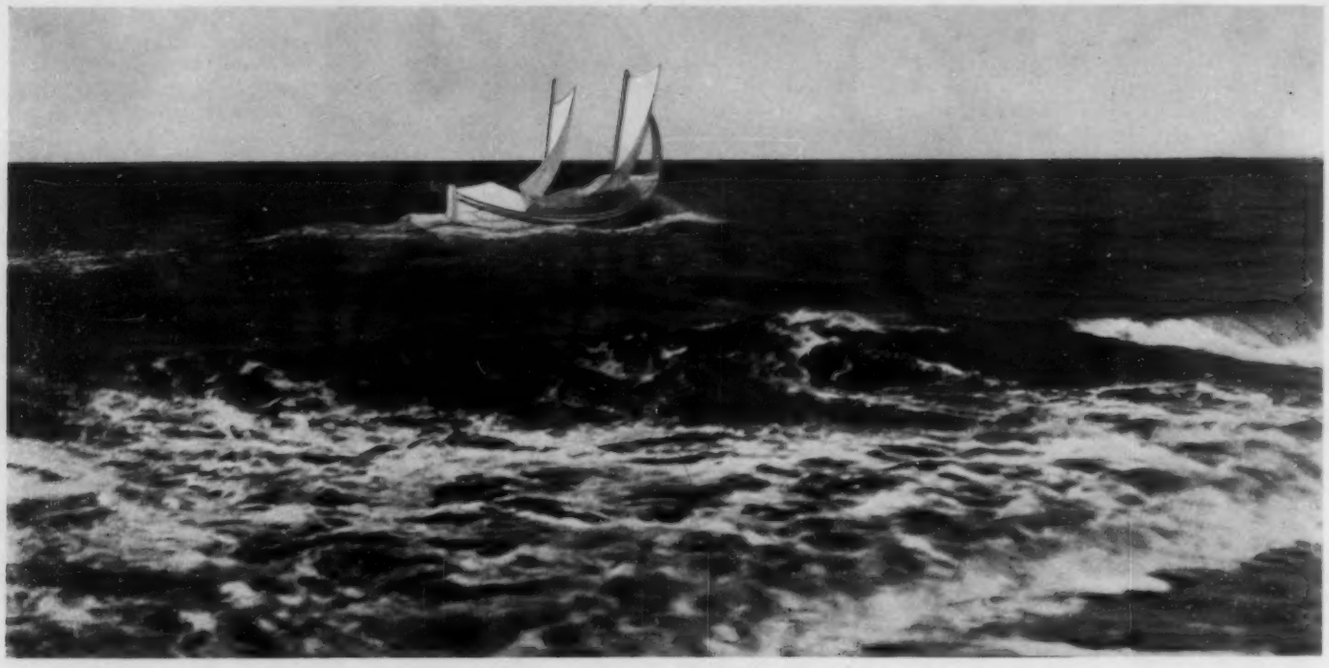
Henry and Joseph Fourniea are working on a boat built of one-sixteenth of an inch steel plates that will be the exact duplicate of C. L. Seabury's Speedway, with the exception of the material of which the hull is constructed. A 60 horsepower six-cylinder two-cycle engine will be installed. Few, if any, speed boats of any note in the West are equipped with four-cycle engines, which seem to be the favorite in the East. Several others are constructing steel boats, the accomplishments of Wonder encouraging them to own boats built of the same material, which is stronger and lighter than wood.

All in all, regatta officials will have all the racing entries they want for next season if Bay City is not overlooked. Every owner of the fast boats has promised to enter the big regattas.

Yachtsmen are planning to include another regatta in the string of events that follow each other so closely throughout the summer, with Wenona Beach, Saginaw Bay, as the objective point, either preceding or immediately following the Tawas Beach event.

MILINOCKETT, A 45-FOOT RAISED-DECK CRUISER WITH 20 HORSEPOWER ENGINE. SHE MAKES 15 MILES.

LOTTIE S., A 35-FOOT HUNTING CABIN CRUISER WITH A 12 HORSEPOWER ENGINE.



LIFE BOAT UNDER SAIL OFF SANDY HOOK.

Fighters of the Sea

THROUGH THE EFFORTS OF THE LIFE SAVERS THE MORTALITY IN THE 15,631 WRECKS WITHIN THE SCOPE OF THE SERVICE SINCE ITS ORGANIZATION, 1871, HAS BEEN LESS THAN ONE PER CENT. OF THE TOTAL NUMBER OF PERSONS INVOLVED—THE WORK OF THOSE WHO GUARD OUR LAKE SHORES—EQUIPMENT

By C. H. CLAUDY

Photographs by James Huntington, George Grantham Bain, and "Collier's" Weekly

NEVER a man puts out to sea, be he in the stoke-hold of a tramp or on the quarter deck of a yacht, who expects to be wrecked. If he did he wouldn't go! Yet to all who know of the service, it must be a comfort to realize that hundreds of men are on watch, day and night, along the coasts of the United States, and that the willing crews of nearly three hundred stations are always in instant readiness to turn out, night or day, to carry help to those in peril of the sea.

The last report of the Life Saving Service showed two hundred and seventy-nine stations in existence, each with a crew of from six to eight men, each equipped with life boats, surf boats, life cars, breeches buoy apparatus and all the various minor impedimenta which go to make up the arsenal of those who fight Old Ocean for the prize money of human lives.

Since 1871, the beginning of the present service, there have been 17,317 disasters to documented vessels, within the scope of the service. There have been involved in all disasters, which the life crews have had a hand in rendering less terrific, 121,627 persons, of whom but 1,172 have been lost; less than one per cent.

In ships and cargo, the total money value involved reaches the enormous total of $251,516,284, of which $52,058,687 has been lost. While it cannot be truthfully said that all the lives not lost would have been forfeited to the sea save for the service, or that all the property recovered would have found a resting place at the bottom of the sea if there had been no life savers, it is undeniable that a large number of persons now alive and well would have been drowned, and that many vessels would have gone to pieces and their cargoes been a total loss, but for the efforts of the courageous crews which patrol and guard our coasts.

STRANDED STEAMSHIP ST. PAUL BEING KNOCKED APART IN THE SURF.

First in the equipment comes the life boat, a structure designed to stand hard pounding, able to stay right side up in all but impossible seas, and to be managed with ease by those who know the art. Next is the surf boat, a lighter craft and

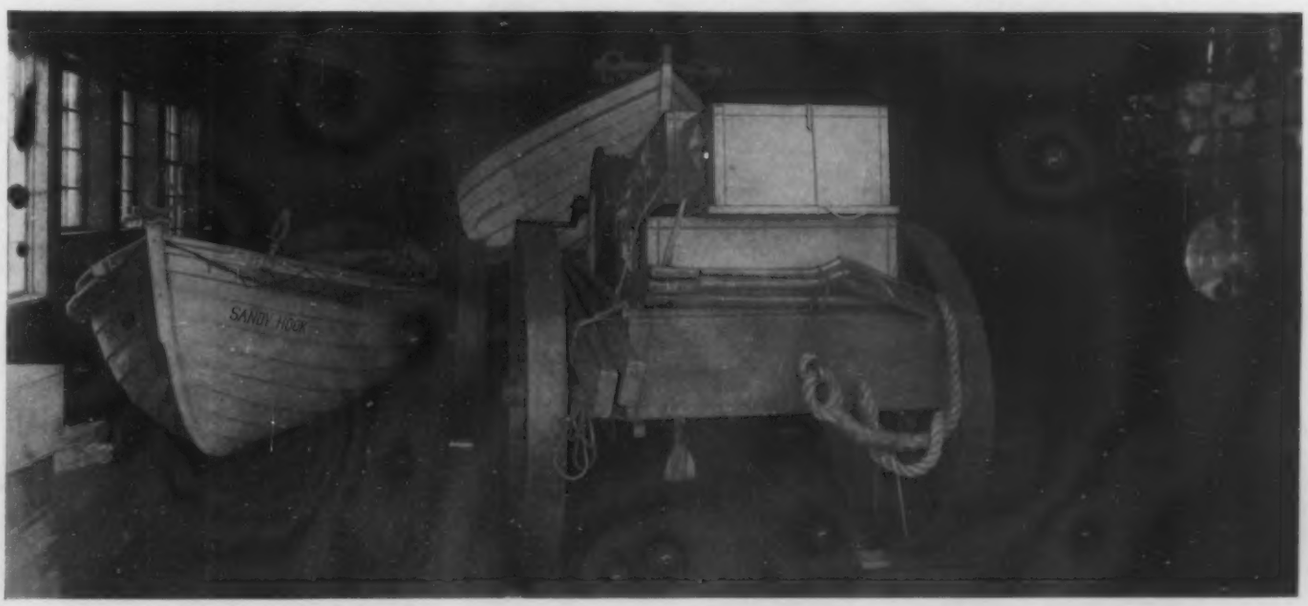
LAUNCHING A LIFE BOAT.

TRYING TO CAPSIZE A NON-CAPSIZABLE BOAT.

much preferred for life saving work if the storm is not too violent on account of her greater responsiveness to oars and muscle. Most of these boats are both self-bailing and self-righting—able to clear themselves of water and turn themselves right side up if upset, but these attributes do not spell safety to the crew, by any means, since a sea which can upset a life boat can well be strong enough to break any mortal grip and sweep a whole crew away—a thing which has happened, unhappily, more than once.

Of the thousands and thousands of lives which would have been lost had it not been for the life boat—of the hundreds of wrecks at which that means has been successfully employed, there is hardly room here to speak. To pick out one or two life boat rescues from all that have been made, is to do all the others injustice. Picking up at haphazard a life saving report, and letting it open where it would, I found the following tale; it is distinctly understood that this rescue is one of thousands, all equally brave, difficult and meritorious.

The American steamship Wyoming, cargo of timber, twelve hands and a woman cook, was running for a Canadian port on Lake Huron on the night of November 12, 1904. She encountered a heavy gale, sprang a leak, became unmanageable, caught fire from her boilers, burned, became a total wreck and finally became water-logged, sinking so that the waves washed half way to the crosstrees. The crew took to a yawl boat and held to the rigging, thereby getting a little lea shelter. The wind increased to a gale, the sea was mountainous, the cold bitter, and it was night. Although nine miles northeast of Port Austin Life Saving Station the patrol had seen the flames of the burning vessel. The keeper called the crew, launched the boat and ran for over two hours before the gale by bearings alone in an all but hopeless effort to rescue the crew. Almost as they were giving up, believing the ship lost with all hands, they struck floating wreckage, and soon afterward located the yawl. Meanwhile, the sea and the wind had so increased that to beat against it was impossible, and it was only by superhuman efforts that a transhipment was made of eight of the thirteen persons, the woman, of course, being taken first. The yawl was then towed behind the life boat. A run was made before the gale to the nearest land to which the wind would allow them to go, and at five in the morning, after five hours' work in ice and snow and cold, the exhausted crew landed their rescued passengers. The life boat and the yawl barely escaped destruction while landing, because of the terrific seas. The heroic crew of the station, however, averted the catastrophe and thirteen lives saved was their reward. The Wyoming was a total loss and was never seen again. Had it not been for the watchfulness of the patrol, who sighted the vessel ablaze, and the promptness and fearlessness of the keeper and his men, the Wyoming would have gone down with



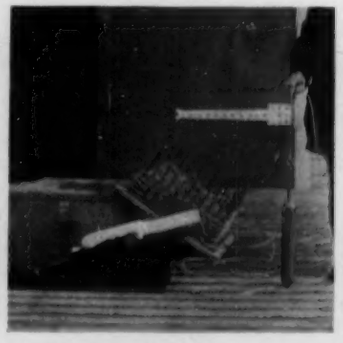
INTERIOR OF SANDY HOOK LIFE SAVING STATION. A TYPICAL STATION. IN THE UPPER LEFT HAND SIDE OF THE PICTURE, HANGING TO THE CEILING, IS A LIFE CAR AND, DIRECTLY BELOW, A MONONOMOY LIFE BOAT. A BEEBE MCLELLAN SURF BOAT, A LYLE GUN AND BREECHES BUOY ON BEACH CART IN CENTER. AT THE EXTREME RIGHT HAND SIDE OF THE PICTURE IS SEEN A SIGNAL FLAG RACK.

Photograph reproduced by courtesy of "Collier's Weekly."

TEN MEN BEING RESCUED BY MEANS OF THE BREECHES BUOY FROM THE SHIP, EDMUND PHINNEY, WHICH WENT ASHORE AT SANDY HOOK, DECEMBER 14. THE LINE SHOT ABOARD WAS MADE FAST TO THE MIZZENMAST, BUT THE SHEARS INTENDED TO KEEP THE SHORE END OF THE HAWSER CLEAR FAILED TO WORK, AND THE MEN RESCUED WERE HAULED IN MOSTLY UNDER WATER.

all hands, as they could never have survived a night in the open sea at that temperature and with such a storm in progress. This rescue is fairly typical—it is in no way remarkable.

After the boats comes the breeches buoy apparatus, spectacular, widely heralded in song and story, efficient when other means fail, and an invention which has many a life to its credit. It consists of a cart, in which the apparatus is carried, a gun to fire a line across the wreck, a whip and hawser, a buoy with a pair of canvas breeches attached to it and shore-end means for holding the hawser and operating the whip so that the buoy travels back and forth upon the hawser—an aerial trolley line which carries over the hungry sea what cannot be carried through it.



CANNON AND SLUG USED IN BREECHES BUOY.

Then there is the life car, an inclosed boat-like structure of iron, which can either be hauled over the hauser like the buoy or pulled bodily through the surf. This device saved two hundred and one lives the first time it was used, and has ever since been a valuable weapon for the battle with the waves—used as a means of last resort, when all else fails.

On these three things—buoy, life boat and life car, the crew of the stations depend for their means of saving life and property, although, of course, they have many minor contrivances, heaving sticks, Coston lights, rockets, searchlights, etc.

The crews have many drills. The various exercises are assigned to certain days and every keeper must hold so many drills a year. Inspectors pass up and down the coasts and through the inland stations, keeping the men up to the mark, seeing that all the apparatus is in perfect order and that the men thoroughly understand their work and are able to do it with snap and precision. In some places there is an additional drill with the boat—the capsizing drill. In this the crews go out in the boat, turn it bottom upward and then back again, and so expert do they become that the keeper who steers the boat and gives the commands is sometimes able to walk around the hull as it turns over and over without getting overboard. In cold latitudes, or where the waves are normally high, such drills are held but infrequently if at all, but their place is taken by hard work at the oars, and marvelous indeed is the skill with which these men, born and bred to the use of boats and the ways of surf, can handle their seemingly small and frail craft. To launch through a high surf—to turn broad-

Photograph reproduced by courtesy of "Collier's Weekly."

SAFE ON SHORE. TAKING A SAILOR OUT OF THE BREECHES BUOY.

MAN IN PROCESS OF TRANSPORTATION FROM VESSEL TO SHORE IN BREECHES BUOY. A PHOTOGRAPH TAKEN ON THE JERSEY COAST.

side to it and progress without being beached—to meet the rollers with the least danger—to return and land without upsetting—to respond instantly to the word of command and to learn that absolute reliance can be placed in the keeper—to understand every set of the water, every play of the wind—these are the things which practice makes second nature, and which, but play in practice, becomes vital facts of life importance when done in deadly earnest.

There comes a time, however, when a wreck faces the shore; when pitiful signals for help are seen, perhaps the flutter of a woman's dress, or a childish wail is borne to the eager ears on shore by the inrushing wind, and the sea is too high for human power to launch a boat. For no matter how practiced a crew may be, how undaunted their hearts, how unquestioned their courage, there is a point beyond which human strength and endurance may not go, no matter how willing the spirit may be or how gladly a sacrifice of strength or even life may be offered. Here is where the breeches buoy comes into play. The Lyle gun is charged, the projectile inserted, and the end of a line bent on. The keeper aims and fires the gun, and if his eye is true and the weather such that he can see to aim, the shot carries across the stranded vessel. This line is hauled off by the imperilled mariners and brings to them a block, with a tag bearing instructions to fasten it to the mast. In this block is the whip, an endless line. When it is fastened, the life savers on shore haul in one side of the whip after bending on to the other side a heavy two-inch hawser, which is in turn hauled seaward and fastened to the mast above the whip. The crew have by this time buried a peculiar arrangement of boards in the sand —called a sand anchor—and have erected a pair of shears, over which the hawser is passed and hauled taut with tackle. A block runs on the hawser, to which is suspended the buoyant ring with the canvas breeches which give the apparatus its name. This is attached to the whip and hauled off to the wreck, and with a man or woman in it, hauled back again to safety. Trip after trip is thus made and while the passenger is dragged through, over, and not infrequently under the water, he almost invariably comes safely to land, where merciful and speedy provision is made for warmth and dry clothing, food and stimulants, so that exposure and privation may not complete the work the sea has been robbed of doing.

What was said a little while back of the life boat rescue stories must apply to any tale of breeches buoy apparatus. To pick one rescue is to make an invidious comparison, when no such comparison is possible or intended. Perhaps the following shows as well as anything the difficulties under which the crews have to work and the efficiency of this piece of apparatus.

On December 11, 1904, the three-masted schooner Montana became a total wreck near the Pea Island Station, a few miles from New Inlet, North Carolina. She stranded at eleven at night, in a howling gale and with snow and sleet falling thick and fast. The crew took to the rigging to be out of reach of the breakers which broke with terrific fury over the already lost vessel. Finally, at midday, thirteen hours after the wreck struck, a shot landed a line almost in the hands of the exhausted men on the wreck. Benumbed by the cold, it was all they could do to get the whip and hawser out, but it was finally accomplished. In two hours time, the six surviving men of the crew were landed, frost bitten, frozen exhausted—the storm rendering quicker operations impossible.

If the waves are too high for buoy work, which can happen when there are no masts left to which the hawser can be fastened, the life car is bent to the whip and from four to six persons hauled through, over and under the water, tumbling, bruised and frightened, but safe, to the land. The hatchway is fastened from the outside by those left on the wreck until the last to leave enter the car, when it is fastened from the inside.

IN THE BREECHES BUOY.

GENERAL SUMMARY

Of disasters that have occurred within the scope of life-saving operations from November 1, 1871 (date of introduction of present system), to the close of the fiscal year ending June 30, 1907.

Total number of disasters	*a*	17,317
Total number of persons involved	*b*	121,627
Total number of lives lost	*c*	1,172
Total number of persons succored at stations	*d*	20,548
Total number of days' succor afforded		48,695
Total value of vessels		$178,507,865
Total value of cargoes		$73,008,419
Total value of property involved		$251,516,284
Total value of property saved		$199,457,597
Total value of property lost		$52,058,687

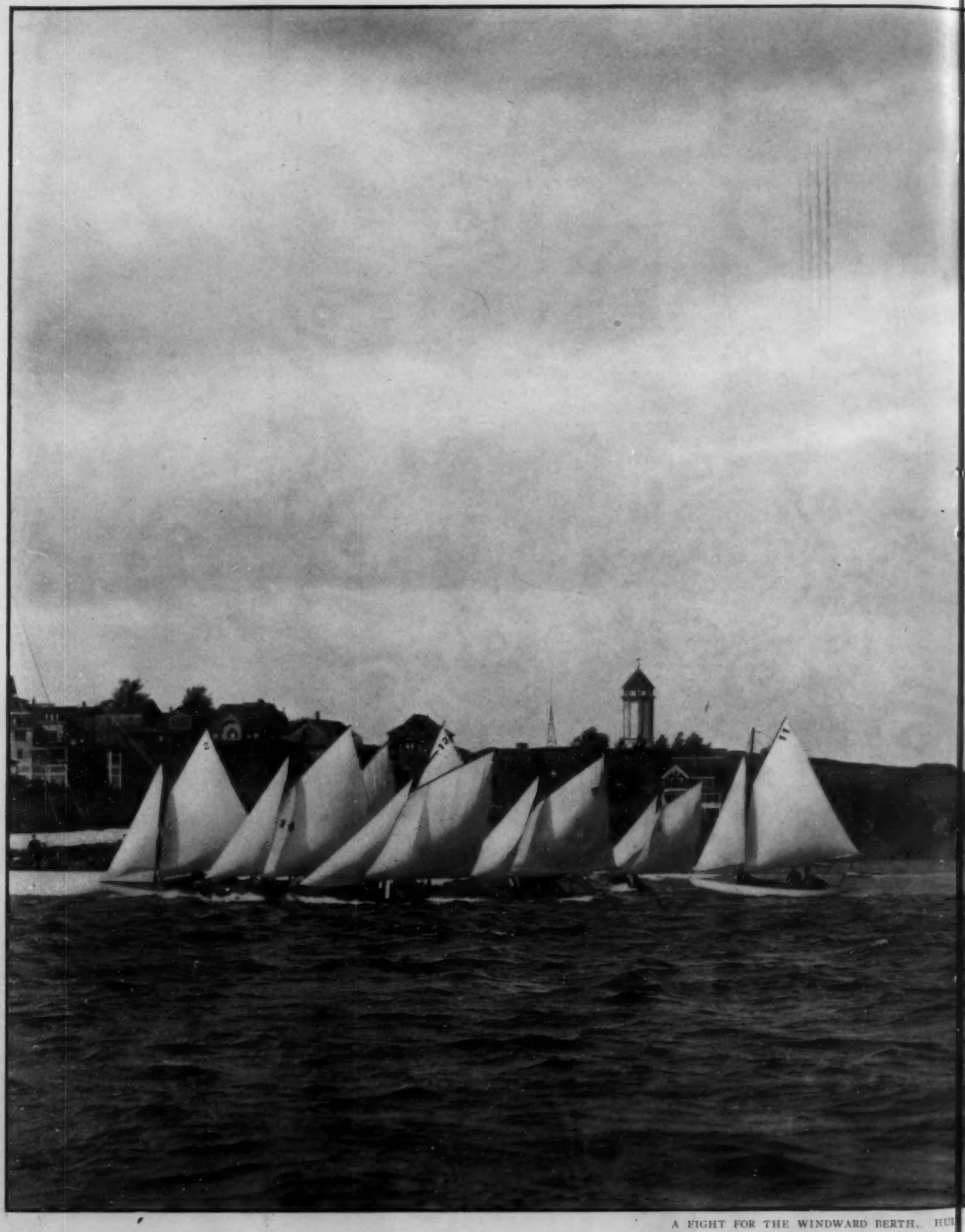
a It should be observed that the operations of the Service during this period have been limited as follows: Season of 1871-72, to the coasts of Long Island and New Jersey; seasons of 1872-74, to the coasts of Cape Cod, Long Island, and New Jersey; season of 1874-75, to the coasts of New England, Long Island, New Jersey, and the coast from Cape Henry to Cape Hatteras; season of 1875-76, to the coasts of New England, Long Island, New Jersey, the coast from Cape Henlopen to Cape Charles, and the coast from Cape Henry to Cape Hatteras; season of 1876-77 and since, all the foregoing with the addition of the eastern coast of Florida and portions of the lake coasts. In 1877-78 the Pacific coast was added, and in 1880 the coast of Texas.

b Including persons rescued not on board vessels.

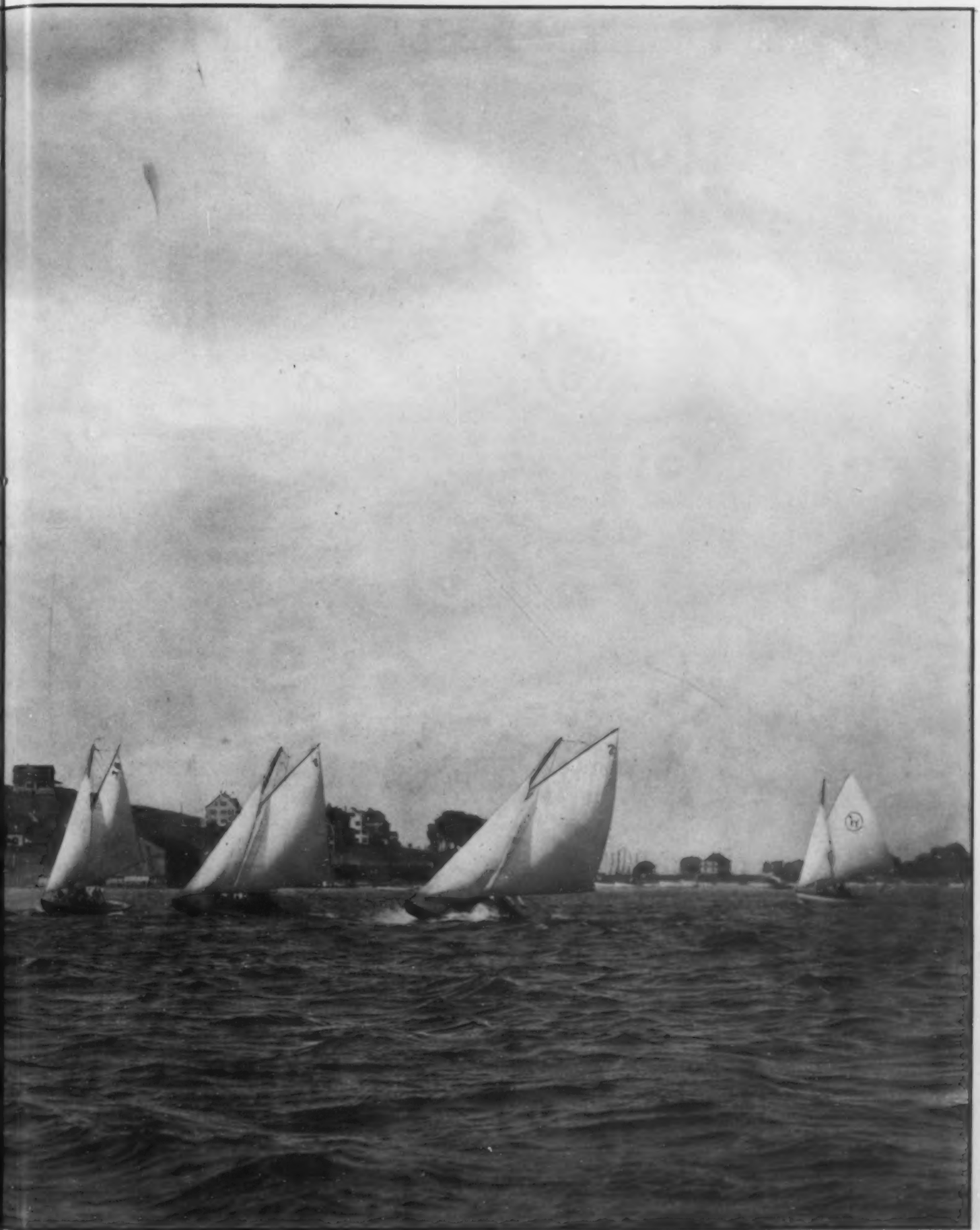
c Eighty-five of these were lost at the disaster to the steamer Metropolis in 1877-78, when service was impeded by distance, and 14 others in the same year owing to similar causes.

d Including castaways not on board vessels embraced in Tables of Casualties.

HAULING CARGO FROM A WRECK TO A CLIFF BY MEANS OF CABLES.



A FIGHT FOR THE WINDWARD BERTH. HUL FIFT



FIFTEEN-FOOTERS CROSSING THE LINE.

BINDING

Around the Horn—The Log of a Second Mate

By T. JENKINS HAINS

Continued.—CHAPTER II.

SILVER SEA was a ship of a little over two thousand tons register and only about six years old. Since steam has taken the place of sails in transatlantic shipping, the old style sailing ships are rapidly disappearing from the seas. Only a few companies in America still build them and they are the ones that control the deep-water trade.

In the days when Richard Henry Dana made his voyage of "Two Years Before the Mast," speed was the greatest object desired in vessels that made deep-sea voyages. Freights were high and a quick passage, even with a small cargo, paid large profits to the owners. Vessels were built after carefully designed plans for developing speed. Studding-sail booms were rigged fore and aft, so that the vessel could increase her sail area by one-third while racing through the tropics with the trade winds. Crews were much larger, as a rule, although the vessels were of smaller size, and the voyages around either Cape were reduced by nearly one-fourth of the time that it takes to make them now.

All this has changed. The huge ships of three thousand tons register that sail from New York, Liverpool and San Francisco, carrying any kind of cargo that they can get, would seem like some marvel of the shipbuilders' art to the sailors of forty years ago.

It is impossible to get a cargo now, from either foreign or American ports, that will pay for transatlantic shipment, so the sailing vessels are driven into the deep-water trade, which is a voyage around either Cape—the Cape of Good Hope or Cape Horn.

Here the steamships cannot follow them, and although the steamers, railroads, and the traffic through the Straits of Magellan, keep the freights desperately low, the huge ships that can raft around upwards to four thousand tons of even railroad iron, grindstones, nails, etc., can make a profit on the voyage.

But no more speed. The ship of two thousand tons register is loaded like a sand-barge, with from thirty to thirty-five hundred tons of iron, marble, stone and anything else that she can get a few dollars freight money on. The studding-sails have disappeared, for it is expensive work, rigging and unrigging them, as they wear rapidly. The crew is reduced to the minimum number that can possibly work the ship. The pay is the smallest possible for a white man to receive, and the food, as a rule, is as cheap and poor as it can be. In spite of the law regulating the amount of lime-juice to be given a sailor per day, during the voyage, he seldom tastes it more than once or twice during the passage and, if he gets the scurvy, so much the worse for him, the company cannot afford to furnish lime-juice at a dollar per bottle for such a dog as he.

Sometimes, in the United States, justice is given, as in the case of the ship Moose, which had twenty-one men out of twenty-three down with the scurvy, when, fortunately, two of these men libeled her. In the Court, the captain made the defense that the men agreed to accept coffee made from roasted wheat instead of the lime-juice prescribed by law. But the Judge said that, "he had no doubt that they would have accepted liquor also," and decided the case in their favor.

Silver Sea was one of the best ships that ever sailed from an American port. She was strongly built in the State where they build only good ships—Maine, and heavily sparred, being of the "three skysail yard rig."

The crew consisted of the captain and three mates and twenty men before the mast, including four quartermasters. Besides these, there was a cook, steward, and carpenter, and also an unfortunate young man of fifteen summers, called "Jimmy." This young boy took it into his head to sneak aboard while the vessel was lying at the dock and conceal himself until the vessel was some ten miles out to sea and then come forth as if the captain would be glad to see him.

The captain expressed neither surprise nor sorrow at the sight of him, but called the mate and turned him over to his very tender care. The mate, to begin with, led him forward and tying him up, gave him a "rope's-ending" that he doubtless remembers yet. After this, he laid down the law to him in some very choice terms, and if ever a boy suffered what is called hazing, this poor little fellow did.

We had thirty-three hundred tons of railroad iron on this twenty hundred-ton ship, so consequently, the deck amidships was just three feet nine inches above the water.

All of the first day out and the following night, we made good time to the eastward, chasing a square-rigger down on the horizon, with the wind hauling steadily to the northward and increasing in force. Eventually we lost the distant stranger without coming close enough to speak to her. The papers had predicted a hurricane advancing up the coast from Bermuda, and from the looks of things it seemed that we would not clear it. My log-book reads thus:

"October 18th.—Toward six o'clock p.m., second day, the wind became puffy, and before dark we took in the skysails. These were soon followed by the royals, and by nine o'clock the top-gallant and upper topsails followed suit. The wind hauled around to the eastward and began blowing hard from the east northeast.

I turned in at four bells, but had hardly got to sleep before I was awakened by a tremendous shock. A huge sea had boarded us and had fallen into the waist, filling the main deck knee-deep with water. Above the deep, booming roar of the gale I heard the captain's order to take in the mainsail and soon we were plunging into it with nothing but the three lower topsails and the fore staysail. In spite of the tremendous jumping, for we were now hove to and heading the sea as closely as possible, I managed to wedge myself into my bunk and sleep on until daylight. When I went on deck a wild scene presented itself. The ship was plunging into a mountainous sea, with nothing but the narrow strips of the lower topsails, hardly deeper than a main yardarm, and the fore staysail; and as far as the eye could reach, there was nothing but a wild raging of waters. Silver Sea, two thousand tons and three hundred feet long, was but a mere skiff in those seas.

We lay hove to on the port tack all day, but the barometer fell steadily, until at six o'clock it had gone down another half-inch. Then the wind hauled suddenly to the southeast and we knew that we were nearing the dangerous center of the cyclone. All hands were called to wear ship, when the fore staysail, that had held all day, parted from the bolt-ropes with a loud crack and was gone. The wheel was put hard up and the ship wore around under the fore, main and mizzen lower topsails. As she came into the trough of the sea, the main and mizzen topsails were squared around, so that she could come up on the starboard tack and try and keep clear of the center of the storm.

As she came slowly up to the wind, a huge sea struck her and threw her on her beam ends, so that for a while it seemed that she would not recover. The water was over the rail and on the decks, when, with a lurch, she righted, sending the whole flood across the deck and flooding the forward cabin and alleyways. On the starboard tack she did not make good weather of it, on account of the peculiar motion of the tremendous seas.

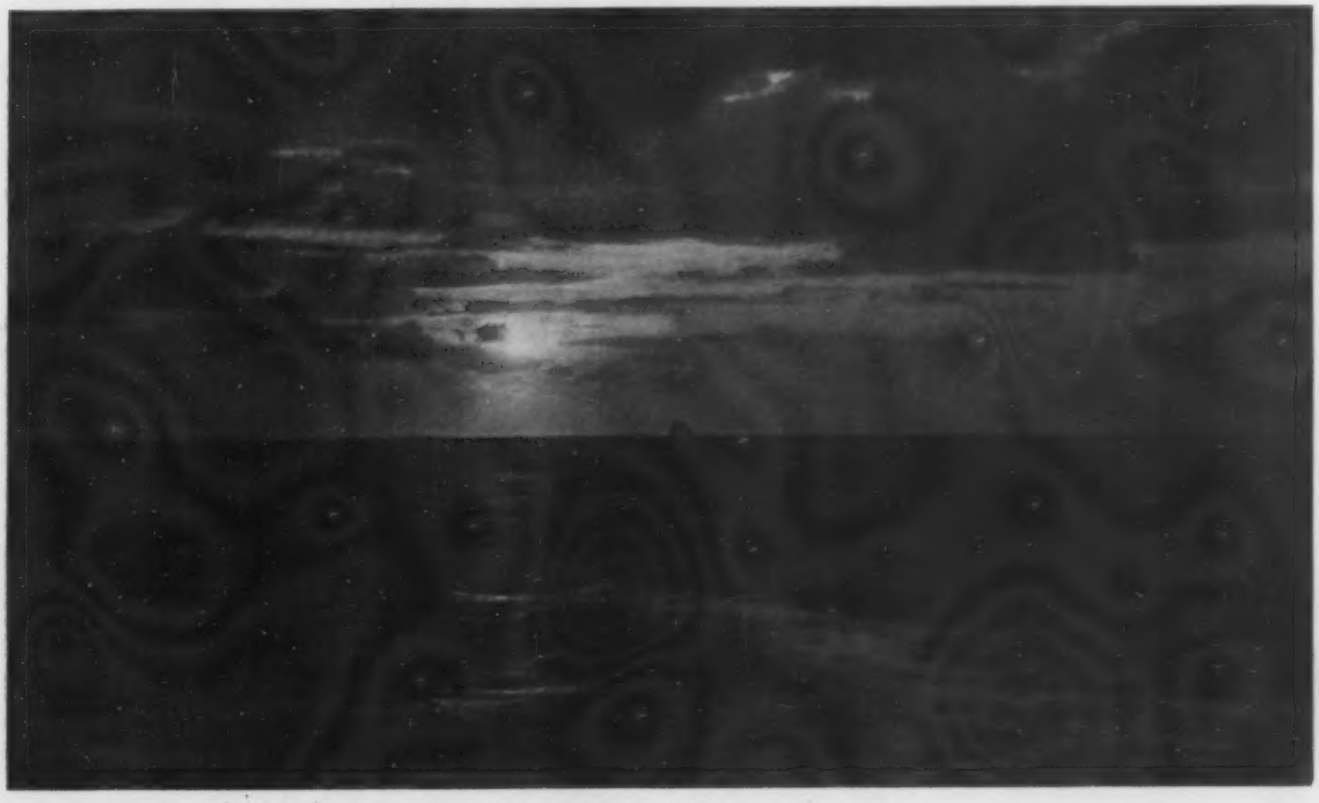
She was close hauled now, with the wind drawing gradually to northeast by east, and although heading this sea, a heavy one came from the southeast, catching her under the counter and pouring over her rail amidships with a crash that shook her from stem to stern.

I turned in after a little while, but the booming roar of the gale and the tremendous motion kept me awake, so that I soon dressed and went on deck. The lower topsails were still holding, making the ship look as though she had one very wide yard on each mast, and the wind was increasing steadily. It was too late to take in either of the topsails now, for the first sheet-rope started would be the signal for the bursting of the sail it belonged to. The only thing to do was to wait and hope that they would hold. All night the captain, first mate and myself watched those narrow strips of canvas in a wind that seemed to move like a solid wall that, while the drift driving like bird-shot, made our eyes look like two holes seared in our heads by a red-hot iron. It was about three o'clock in the morning when the main topsail parted with a crack that could be heard above the storm and was flying in ribbons to leeward. In about half an hour the fore topsail followed suit. Every minute I expected to see the mizzen go also and with it the last hope of keeping a rag on her. But, with that one strip holding, however, we still kept her up well and, as long as we could head the sea, there was a good chance of our weathering the gale unless some accident happened. It bent and stretched until the foot-rope was clear up to the yard, but it held fast.

All hands were kept aft to avoid the dangerous seas that washed the main deck, and after the main topsail went we strove to get the main spencer from the lazaretto and make it ready for setting. The wind blew so hard that it was impossible to face it, as the drift blinded one almost instantly and caused as much pain as a blow from a whip. There was nothing more to do but wait.

As we wore ship, I had a narrow escape from falling overboard. Just as the ship was thrown on her beam ends, I started across the deck, which was then almost perpendicular, and brought up standing on the rail just in time to grab the crossjack preventer stay, that was hanging loose to leeward, and hold on.

October 20th dawned on as dismal a scene as anyone could care to witness. The huge ship hove to under the mizzen topsail, the fore and main hanging in ribbons to leeward. Everything and everybody wet through from rain and drift, and the heavy seas were coming up and breaking clear and green over her high rail. The main spencer, a storm sail, was at last ready to set, after all hands had worked for three hours on it, and it was a relief to feel that we had something to fall back on in case our last topsail gave way.

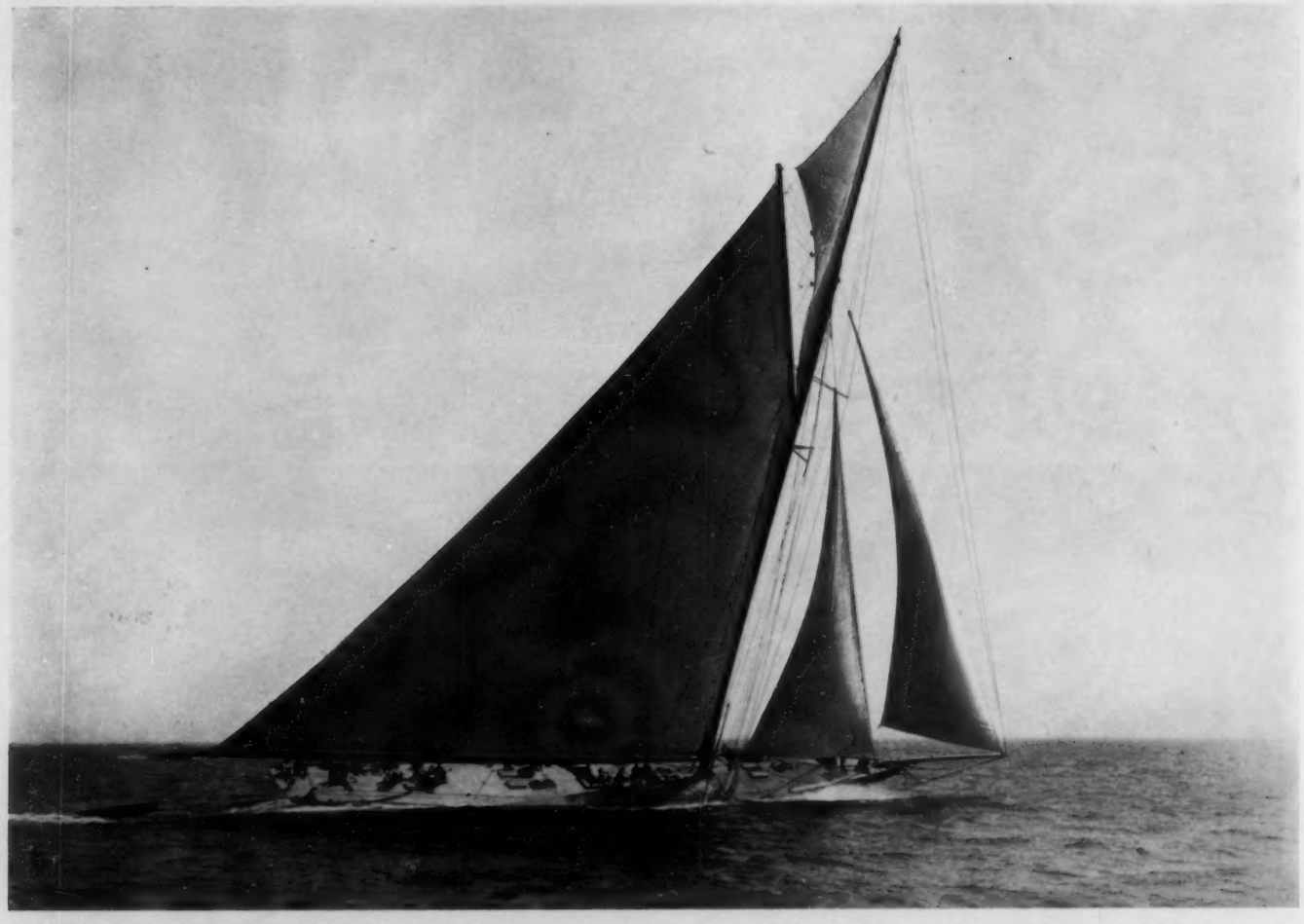


"A SQUARE RIGGER DOWN IN THE HORIZON."

I had been soaking wet all night and the captain was so tired out that he sat down in his oilskins, on the running wet deck, to rest and give orders. What a blessing that big voice was to him then. But, big as it was, it could not be heard many feet away in that roar. We could not stay much longer on this tack, as the sea was too heavy to ride and the wind was hauling more and more to the northward.

As soon as it was well daylight, the order was again given to wear ship, and again, with the aid of a piece of the jib, she managed to get off before the wind. All the time, since midnight, oil had been poured overboard to calm the combing seas. We managed to get clear of the trough this time without accident and the wind kept hauling until it was fair for our course on the port tack. The seas were too heavy to run, however, with the ship as deep as she was. We tried it for ten or fifteen minutes,

(Continued on Page 110.)



INDEPENDENCE. SHE WAS A CROWNINSHIELD NINETY-FOOTER, BUILT AS A CANDIDATE TO DEFEND THE CUP AGAINST SHAMROCK II, ALTHOUGH HER OWNER WAS NOT A MEMBER OF THE NEW YORK YACHT CLUB. SHE NEVER ENTERED A REGATTA OF THIS CLUB, BUT COLUMBIA BEAT HER HANDILY OFF NEWPORT.

The Month in Yachting

Photographs by N. L. Stebbins

WHILE it is a bit early to pronounce definitely upon the prospects for next season, there is little risk in basing upon indications appearing thus far the surmise that yachting this year will not be nearly so dull as was predicted several weeks back, when the country faced financial conditions of the most discouraging sort. That the effects of this stringency will be seen in the racing of large craft of the swiftest and costliest type, there is, at this writing, little reason to doubt. Viewing the situation, as it now exists, we may look for diminished numbers of crack racers of the "important" classes in the events on the Sound next summer. But this, after all is said and done, is dependent upon the stock market. If conditions in Wall Street within the next month or so become genuinely stable, many a yacht owner, who at present is inclined to shiver at any mention of placing his boat in commission and racing her throughout the season, will lose little time in sending to the shipyard and ordering his craft overhauled and refitted, preparatory to going overboard.

There is still a great deal of leeway for such orders as these, and, this being the case, it would obviously be rash to attempt to draw, even from certain dolorous facts in hand, conclusions as to the extent of the falling off in the classes above that of the New York Yacht Club thirties, which will confront the Regatta Committees of the New York, Larchmont, Seawanhaka, Corinthian and other prominent eastern organizations. But there will be no new sloops in any of these classes; that much may safely be ventured. Men who, at the end of last season's racing, let it be known that "next year" they would build new boats, reckoned, so to speak, without their stock market, and any orders that were to be submitted to designers never got beyond the tentative state. As to schooners, the outlook is better. It may be stated that a certain eminent designer is pushing forward a fore and after of the ninety-foot class, of which I shall say more as soon as the necessary permission is granted. For the present, however, it may be predicted that a great deal of strenuous work is in store for Queen and Elmina next season, if plans now on foot mature in accordance with present trend.

PLANS FOR NEXT YEAR.

Ingomar, it has been reported, will not go into commission. If she does not, Charles Barr will, no doubt, be open for engagement. Herein F. M. Smith, owner of Effort, might find an opportunity to do something quite striking, if the wily skipper would not consider the first winner of the King's Cup too small for

his dignity. Barr at the stick of Effort would be worth watching. Few of open mind believe that the best that Effort can do has ever been developed in this grand boat, and the manner in which she was raced last year was enough to make those impartially interested in the sport heartsick. At the beginning of the season, Harry Maxwell and Addison G. Hanan sailed her in several races, with good results, of course. Then Maxwell went to Queen and Hanan to Canada, and the Smith sloop thereafter was sailed by almost anybody. It was little short of tragic, on the day of the King's Cup Race, to see her sail out to the starting line, stand by watching the other boats get away and then sail back into Newport Harbor. The conditions were to her liking, and with Hanan at the helm, there is no telling what she would have done. Effort is a Gielow-designed boat, built under the Uniform Rule, and it would be interesting if, next season, she were to be tried out as skilfully and as consistently as Queen, in the schooner class, has been.

With Ingomar out of it, the field of opportunity for a man of Barr's calibre would be limited indeed next season, a decided contrast to conditions in England, where in the course of preparations for the racing of swift sloops on the Solent the names of Bevis, Parker, Sycamore, Hogarth and Wringe fill the minds of all sport-loving Englishmen and Scotchmen—a fine quintet of skippers. How could we match them here? Barr—they are all inferior to him, small doubt. But then, Barr is a Scotchman—Scotch born, at least, and a product of British racing. Then there is Harry Haff, of Istalena, good, but hardly of his father's mold. There is Dennis of Elmina, a captain of the first rating, Rhodes and Howell, Miller and a few others of lower qualification.

THE GALLANT SLOOP, PURITAN, WHICH SUCCESSFULLY DEFENDED AMERICA'S CUP AGAINST GENESTA. SHE HAS BEEN SOLD AT AUCTION FOR TWO THOUSAND ODD DOLLARS.

AMERICAN AMATEURS.

It seems that the British rather have the advantage of us, speaking from a professional standpoint. Of amateurs, with such men as Hanan, Adams, Johnson, Iselin, the two Maxwells, Duncan, Morgan, Cornelius Vanderbilt and a dozen others, we may assume a superiority which, unquestionably, is genuine. "Wicked Willie" Jamison, who came here with Shamrock II—reputed to be the best amateur of his generation—did nothing in the international series to demonstrate his alleged ability, although, of course, he sailed on the Lipton challenger merely in an advisory capacity.

It is interesting to note that B. B. Crowninshield, in the schooner which he has designed for a Honolulu syndicate for the 2,500-mile ocean race from San Francisco to the Hawaiian Islands, has evidently obtained inspiration from some of the old time racers of the American pilot type, of America and Galatea. The keel runs horizontally from the rudder heel for almost twenty-two feet before it turns up at a sharp angle, while the sail plan approximates that of the Gloucester fishing boats. On paper it seems an ideal boat for the work it will have to do. To windward it should improve materially upon Crowninshield's creation of an altogether different sort, the Lawson ninety-foot sloop, Independence, which, while footing at a fourteen-knot clip, would make leeway like a crab. Still, Herreshoff learned something from that wild boat, and embodied a little—just a little—of this knowledge, we dare say, in Reliance.

THE PURITAN.

Hail to the Puritan! A staunch old boat she, and, aside from her victories over Genesta in an America Cup race, well worth the admiration of the most exacting shellback between the Delaware Breakwater and Eastport, Me. The veterans of the most famous international races in the yachting annals of the world have fallen fast of late. Only a year ago we saw the good old Volunteer offered for sale at a low price, and the ways of Mayflower, Vigilant and others of the glorious galaxy have all been toward obscurity. And now Puritan has been sold—under the hammer—probably to end her days as a fishing boat. At least, this assumption is warranted in view of the fact that her qualities, as just the boat for fishermen, are set forth in the auctioneer's advertisement. . . . About a month ago the life-savers of the station at Sandy Point on Block Island watched with deep interest the fight of a tall schooner in an angry December Atlantic gale. Her mainsail was reefed down to a shred and a bit of staysail was the only kite she showed. She labored heavily through the smother and there were times when the watchers on shore were certain they had seen the last of her. All through the tumultuous hours she forged ahead, plainly making for the harbor at Dutch Island, where she could find that shelter, which any windjammer, large or small, along the coast, would not have been ashamed to seek. Could she make it? The life-savers asked one another this question again and again. There was but one answer: "She won't live another half-hour." But she did. Wallowing, flailing, plunging, shipping green water at every dive, she threshed her way through the lonely turmoil and just before dark pulled into the haven for which she had been struggling all afternoon. She was the old defender, Puritan. From Boston she had fought her way around the Cape, through a constant succession of gales, and when she finally made Providence, where she was to be sold, her hull interior was as dry as the loft of a grist mill. This means something. It speaks volumes for design and construction as applied in this old yacht, and one cannot but wonder what would have been the fate of Reliance, Constitution, the Shamrocks and even Columbia, under the conditions which Puritan encountered on her way to her own auction. The very object of her trip lent an element of the tragic to her remarkable performance. She was sold for the paltry sum of $2,650, the purchaser being William M. O'Connor of Fall River, who at present is undecided what to do with her.

Puritan was built from designs by Burgess in the early '80's, at a cost of $30,000. This was an enormous sum for those days, but it pales into insignificance before the outlay involved in the construction of Columbia, $150,000; Constitution, $200,000

Reliance, $250,000. Herreshoff, it would appear, has charged an extra fifty thousand dollars for every extra knot or two of speed.

THE DEFENDER'S LAST RUN.

One day in the early spring of 1900 I was standing on a bluff at City Island, gazing up the Sound, when a towering mass of white appeared in the distance. In the course of half an hour it was apparent that the bellying sails belonged to a ninety-foot sloop. But which sloop? Constitution was building at Bristol. Columbia was on the ways just at my elbow. As the stranger came nearer, the familiar lines of one of the grandest boats that ever sailed revealed themselves—those of Defender. She swept into the harbor like a queen. She had made the swiftest run from New London, the swiftest eighty miles that any yacht ever logged. A week later iron workers were smashing her into a pile of junk. It was her last run, and her best. The impression of a proud and sentient sloop, realizing that for the last time she was under canvas, and leaving nothing undone to make that event a memorable one, was and still continues strong. I do not recall the exact time of the trip, but W. B. Duncan, Jr., who brought the boat to her last resting place, no doubt has the minutest details of the passage indelibly engraved on his mind.

There are many who believe that in Reliance the Bristol wizard attained his maximum speed within the "margin of safety." The designer of a racing yacht must always have this margin in his mind's eye and, in calculating resistance, stability and the like he must make sure, if he is to produce a cup-winning boat, not to sacrifice lightness to strength. On the contrary, it is all the other way. Reliance, in a fifteen-knot breeze—I will concede twenty—was regarded as reasonably safe; but many who knew her trembled to think what would happen if a thirty-knot squall hit her.

As a matter of fact, no one looked for thirty-knot blows off Sandy Hook in August—and if one had come: well, that was the chance Herreshoff took. If the designer can encroach further on the limit of safety in any new defender that may be produced, we shall see a faster sloop than Reliance, in all probability. And those who, at first thought, might venture to predict that this cannot be done, had better pause to consider the fact that Nathanial G. Herreshoff is concerned. Under the new rule of measurement—but why speak of that in the face of the fact that no defender will be built under this rating?

ELECTION AT LARCHMONT.

It is to be regretted that the misguided friends of A. Bryan Alley should have presented him for election as secretary of the Larchmont Yacht Club after a younger man had been placed on the regular ticket. Everyone knows what "Bry" Alley did for this splendid organization of yachtsmen in the fourteen years of his incumbency of the office of Secretary; but the younger element of racing men were clamoring for that change which must come in every organization from time to time if the best results are to be obtained. And so, as the secretaryship involved to a large degree the determination of the policy of the Club's administration, the fight was made on that office. A. H. W. Johnson was nominated regularly, and, later, Mr. Alley's closest friends placed him in nomination. Mr. Johnson won by about two hundred votes, an election made unanimous at the suggestion of the defeated candidate. The reports of keen ill-feeling as a result of this election may be emphatically denied. There was feeling, to be sure, but now, with the votes counted, all loyal Larchmonters have joined hands and will work harmoniously for the general good. With Mr. Johnson as a powerful factor in the Club, things will hum up in Horseshoe Cove next summer. Those who know the new Secretary have seldom seen him loitering about the club porch. He is best remembered as attired in sea boots, working clothes and battered yachting cap, making his way to and from the yacht landing, always immersed in the business of racing, blow high or blow low, with no time at all for dallying with the rocking-chair fleet.

He is a sailor all through. Last year he sailed the Morris sloop, Gardenia, throughout the season, winning six first prizes in her class and two special prizes. This is a magnificent record, and hardly less fine was the spirit that he maintained aboard his yacht. He had, with one or two exceptions, an amateur crew, who respected and admired their skipper and would have done anything for him.

Success of Bermuda Race Assured

WITH five first-class schooner yachts and one yawl entered for the ocean race to Bermuda, under the auspices of the Corinthian Yacht Club, next June, the success of that event is assured. That more boats of varying sizes will enter before the entry list closes on May 20, there is not the slightest doubt; and, in fact, those most in touch with the situation look for the most important race to the "Onion Patch" that has ever been sailed to the beautiful island.

Thus far, three of the boats entered sailed in last year's ocean race for the Maier Cup, held by the Brooklyn Yacht Club, while three are newcomers. The three boats which participated in the Brooklyn event are Dervish, the winner; Zuhrah and Lila, a yawl. The others are the great transatlantic racer, Fleur de Lys; Margaret, an auxiliary, and Esperanza.

Dervish, owned by Henry A. Morss, Commodore of the Corinthian Yacht Club, is 85 feet over all, 56 feet on the water line, 18 feet beam, draught 10 feet 6 inches. She was built in 1906. Dimensions of the other craft follow:

Fleur de Lys, schooner, Dr. Lewis A. Stimson, N. Y. Y. C.; length over all, 108 feet; length on load water line, 86 feet 6 inches; beam, 22 feet; depth of hold, 12 feet; draught of water, 13 feet 6 inches; built in 1890.

Margaret, auxiliary schooner, Mr. George S. Runk, N.Y.Y.C.; length over all, 93 feet; length on load water line, 60 feet; beam, 19 feet 3 inches; depth of hold, 9 feet 4 inches; draught, 8 feet 6 inches; built in 1903.

Zuhrah, schooner, Mr. Henry Doscher, New Rochelle Y. C.; length over all, 84 feet; length on load water line, 56 feet; beam, 19 feet 3 inches; depth of hold, 8 feet 3 inches; draught, 8 feet; built in 1901.

Esperanza, schooner, Mr. J. Dalzell McKee, Atlantic Y. C.; length over all, 88 feet; length on load water line, 63 feet; beam, 18 feet; depth of hold, 10 feet; draught, 8 feet 3 inches; built in 1896.

Lila, yawl, Mr. R. D. Floyd, Brooklyn Y. C.; length over all, 40 feet; length on load water line, 30 feet; beam, 13 feet; depth of hold, 5 feet 3 inches; draught, 5 feet 4 inches; built in 1905.

It may be that Mr. McKee will come up to the starting line with a larger craft than his Esperanza, which rates in Class B. He would like, he said, to race a Class A schooner, but if he finds circumstances such that he is unable to secure one, he will sail in the craft at present entered. Isolt, also, will be brought up from Bermuda by Commodore Meyer, who raced in her last year for the Maier Cup.

Engines and Other Things

By T. LOGAN SMITH

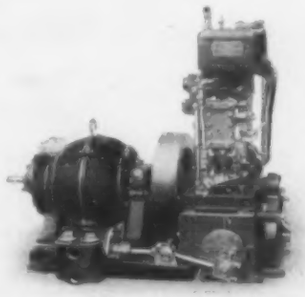
EXHIBITS, at the recent Motor Boat Show, showed a tendency toward refinement in details which would have been entirely unthought of a few seasons ago. Heating the feed to a steam boiler is an old trick, but now the same idea has been applied to the motor. This was shown at the Grand Central Palace exhibit by motors having the carbureter water-jacketed, utilizing by this means the heat of the discharge from the engine water-jacket to bring up the temperature of the intake and keep it equable.

The under water exhaust which has many advocates, has several appliances for reducing the back pressure on the motor.

Speaking of back pressure, a method of condensing the exhaust, by the injection of a small stream of water, thereby creating a partial vacuum in the exhaust pipe was another feature shown. The days are past when the motor boater cheerfully pumped his bilge water out via the water-jacket and discharge pipe, filling up the aforesaid water-jacket with sand and debris in the operation. When we do use a power bilge pump to-day, it's an auxiliary and when the craft is large enough, we even employ an auxiliary motor to run it, one of these little motors of 2-horsepower, and weighing less than thirty pounds, beautifully finished, having just been brought out.

"What kind of a motor should I purchase?" asks the novice. He might as well inquire what sort of a coat to wear. The use to which the engine is to be put should govern the choice as the time and place of wearing determines the style of garment.

For a small, light hull, when as much speed as may be obtained reasonably is desired, such as a canoe, skiff or small open launch, a small, light, single-cylinder, two-cycle engine, giving a high number of revolutions per minute, is the proper thing.



INDEPENDENT ELECTRIC GENERATING SET.

In larger open craft where the horsepower is seven or more, a double cylinder engine will give less vibration, but will require more attention and the expense for spark plugs and lubrication will be increased. One particular type of engine is no longer expected to prove serviceable for any usage aboard any kind of power craft. The motor boatman has learned that to install a light, fast engine in a heavy and comparatively slow moving hull would mean the consumption of a lot of gasolene in helping the propeller to "race."

On the other hand, a heavy, slow engine, which would be just the thing for a cruiser makes a mighty poor showing in a light runabout of fine lines. The folly of installing a small, fast engine of five or six horsepower as an auxiliary, in a forty-foot sloop, just because it stows easily under the after deck is also realized now. As a matter of fact, the average sailing craft, on account of her lines is apt to require considerably more horsepower to secure a required speed than would be needed in a launch hull of equal water line length.

On account of its compactness, low center of gravity, and lessened vibration, the horizontal engine is a factor that must be reckoned with during the next year or two. Already this style of motor is made in both two and four-cycle and in horsepowers ranging from 6 to 40. These horizontal types of motor are in the smaller sizes particularly adapted for use in dinghies where they may be stowed under the thwarts and in the larger powers, for use as auxiliaries, in sailing craft in which they occupy so little space under the deck as to be absolutely out of the way.

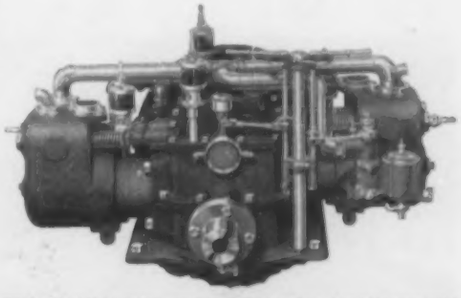
The choice of reverse mechanism depends upon the nature of the craft and outfit with which it must be utilized. On small light craft and where economy must be practiced the reversible propeller is a better proposition than the regular reverse gear. The latter is comparatively heavy and is also expensive. In a small boat the additional weight makes quite an added item to her draught while the reversing propeller is light and comparatively inexpensive. On the other hand, on larger craft the reversing gear is better. It is stronger, more solid and allows of greater speed. In the matter of propeller wheels the power boatman is particularly fortunate. It does not matter what kind of a craft he has or to what purpose he puts her. Somewhere he can find a style that will give him the best service under the particular conditions which govern its use. To many people a wheel is a wheel and much blame is thrown upon hull and engine when the real trouble lies in the fact that neither is really doing its best because they are not being pushed along by the right kind of a propeller blade. There are weedless wheels, which won't give as much speed as the regulation blade when in open water but will go through masses of fresh and salt water vegetation smoothly, easily and quickly, where a boat equipped with the ordinary wheel would be hung up stopped. There are solid wheels giving great power and steadiness in moderate speed craft. There are racing wheels for the fliers equipped with rapidly rotating engines, and then, for the man who wants to experiment and get things right down to the finest possible point there are the blades that may be adjusted to a fraction of an inch so that the boat owner may keep shifting and changing their pitch until he gets the one that gives him the best combination of speed and steadiness at the number of revolutions of his engine at which it produces the best results.

In the matter of accessories, the motor boat owner of to-day is in a position to surround himself with all the luxuries of a city dwelling. It is now possible to equip a power boat with an acetylene or an electric lighting plant that will give as much illumination as anyone could desire and at the same time be absolutely safe. The electric current may be obtained from a dynamo taking so little power from the shaft that it is almost negligible and this current retained in a storage battery, against the time of need, will feed a constant and untiring supply to the sparking apparatus. Acetylene lighting may be accomplished by either storage tanks or generating apparatus, and a recent and particularly ingenious arrangement of acetylene burners provides for light within a glass receptacle insulated from the interior of the boat and deriving all its supply of oxygen from the outside atmosphere.

The skipper may take his choice of cooking by acetylene, kerosene, alcohol or electricity. But the latter method is scarcely to be recommended except in the case of very large craft supplied with powerful generating apparatus, as otherwise, for plain out and out cooking, such as broiling steaks, the operation is apt, with a small or moderate electrical equipment to prove both slow and wasteful in current. For making coffee, boiling an egg or keeping meals warm, however, it will be found a great convenience. But it must always be remembered in regard to this that cooking by electricity utilizes much more current than illuminating.

Among other accessories that are nowadays considered necessary to the proper equipment of a power boat is the whistle. It was not so very long ago that a whistle connected directly to a pump was considered about as good an apparatus as anyone would require, in fact it is all right to-day on a small boat. On the larger craft, however, are whistles now operated by means of air compressed in a tank by an auxiliary pump attached to the motor or by gas from the engine stored under pressure. Another bit of signal apparatus more necessary than the whistle, after the sun has gone down, is the collection of sailing lights. Kerosene has here taken a decidedly back seat. In place of the greasy, dirty, ill-smelling head, side and other lights which only a few years ago were considered absolutely the greatest thing, the cruiser of to-day has his option of acetylene or electricity as an illuminant, and a searchlight using either acetylene, incandescent or arc electric lights may be operated from the bridge-deck or the pilot-house.

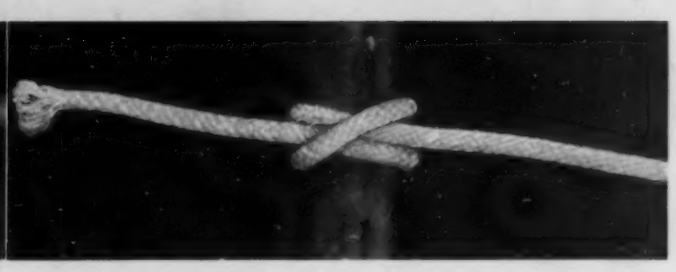
When one compares the up-to-date cruiser with her acetylene stove, electric search light and incandescent or acetylene lighting system, her six feet head room and perfect engine control right at the steersman's hand, with the motor boat of only a few seasons ago lighted by kerosene, under powered and crudely controlled, it is no wonder at all that the number of power boatmen has increased ten-fold.



TWO-CYLINDER FOUR-CYCLE HORIZONTAL OPPOSED ENGINE. THE ENGINE SHOWN ABOVE DEVELOPS FROM 8 TO 10 HORSEPOWER. ITS LOW, COMPACT FORM ALLOWS ITS CONVENIENT INSTALLATION UNDER THE COCKPIT-DECK OF A CRUISER OR AUXILIARY AND UNDER THE THWART OF A TENDER.

And yet it was the old fashioned craft that gave the sport a start, and it's the small, moderate priced motor of to-day that first interests and brings the novice into the ranks, and having done its work and demonstrated how much there really is in life afloat, passes him along to large, more powerful and also more expensive equipment.

I. FRICTION OF ROPE AND A SMOOTH PIPE. BY INCREASING THE NUMBER OF TURNS THE FRICTION MAY BE SO GREAT THAT THE ROPE MAY BE BROKEN IF THE PIPE BE HELD FAST.



II. CLOVE HITCH. PARTS OF THE ROPE ARE DRAWN TIGHT, SO AS TO OBTAIN THE GREATEST HOLDING POWER. AS THE STRAIN INCREASES, THE PARTS JAM AND THE FRICTION INCREASES IN PROPORTION.

The Knots in Common Use—Part I

By WILLIAM E. PARTRIDGE

Photographs by Edwin Levick

THE youngster who is fond of boating and has studied some old book on knots and splices usually has a disappointment in store when he takes his first cruise on a yacht or sailing vessel. He has imbibed the idea that there must be dozens of knots in daily use and he is anxious to see "how it is done." His surprise comes when he finds how few knots and hitches supply all the requirements of the service. In the ordinary routine of work on a yacht or sailing vessel, less than half a dozen knots are actually in common use. These, however, are of the greatest importance and without them it would be difficult indeed to perform work on shipboard. These may be called the fundamentals which must be learned thoroughly if a man has any practical work about a sailing craft of any kind. It is of these commonly used and essential knots and hitches that we wish to speak in this article.

These knots are of interest to persons of almost every class in life, for, at some time, they may be called to fasten a rope where human life may depend upon the security of the knot. Even if one does not often go out sailing and on the rare occasion is a passenger, it is important to know how to make a rope fast in a way which is quick, strong and perfectly secure. Property is often dependent upon the tying of a knot as for example when a boat or tender is made fast. Once during the past year at a fire, serious injury resulted from a knot that opened under strain. Persons were attempting to escape from the burning building by a rope made of bed clothes. One of the knots slipped and one person fell to the ground and was seriously hurt. This would have been prevented by a properly made knot.

It may be too much to expect a lady to learn how to make a sailor knot of any kind. It would, however, be a great advantage if every girl knew a few of the simple and more commonly used knots. They would be man independent and safer and better able to go sailing even when they have escorts.

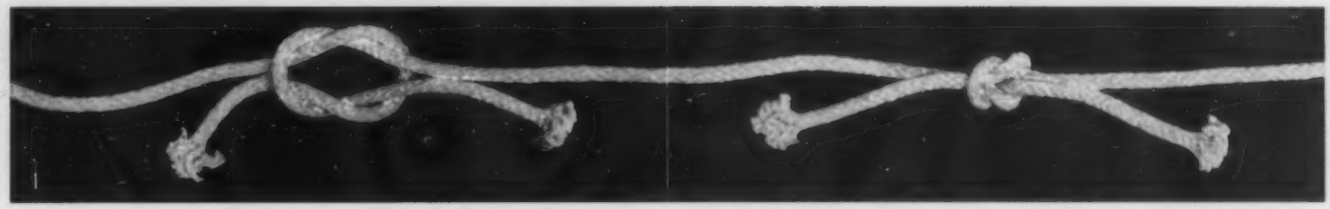
In actual practice the word "knot" has a sort of double meaning. It is applied to the turns by which a rope is made fast and also to permanent convolutions of rope like the Turk's Head of Matthew Walker. Just now we are concerned in the common ways of tying ropes or making them fast and the principles involved in this operation.

In making fast a rope or in tying a knot to join two ends of rope we depend on friction for the holding power, and we place the turns of the rope in such a way that the heavier the strain the greater will be the friction. It is fortunate that the friction of ropes upon each other is great, and a little increase in pressure or a few additional turns increases this to an almost unlimited degree. Figure I shows how, by friction alone, a twisting power may be obtained, limited only by the strength of the rope. Such an arrangement is frequently used as a pipe wrench. Although not as compact, it is quite as powerful as the wrenches regularly in use. It is effective on a smooth polished bar or on the roughest pipe. The lower hand holding the two ends applies only strain enough to prevent the rope from slipping.

An illustration of the power of friction is seen when we take a hawser from a vessel coming into a wharf, and carry it to a bollard or pile to check her headway. One turn about the pile and a single man's strength is absolutely useless in producing any effect, another and then another turn is added. With each one an increased result is noted and usually at the third turn either the vessel's motion is checked or it becomes necessary to "light" the turns about the pile and pay out the rope or hawser to prevent it from breaking. Each turn around the pile or post adds to the friction and this is increased by the pull of the man on the free end. His effort keeps the hawser in close contact with the surface of the pile making the friction greater. While we have not had an opportunity to measure how much friction can be obtained between a rope and a smooth iron bollard head, yet we are inclined to think that

III. CLOVE HITCH BEGUN. THE LOOP OR "BIGHT" IS THROWN OVER THE ROD AS THE FIRST STEP. IF THE POST OR BAR HAS NOT AN OPEN TOP THE END OF THE ROPE IS PASSED TO MAKE THE LOOP.

IV. THE CLOVE HITCH WITH THE FIRST HALF IN PLACE. THE SECOND LOOP IS IN THE HAND AND READY TO GO OVER THE TOP OF THE FIRST. IN ACTUAL PRACTICE, BOTH LOOPS CAN BE MADE TOGETHER AND SLIPPED UPON THE POST.



VI. SQUARE OR REEF KNOT. THE PARTS ARE OPEN TO SHOW THE FORMATION OF THE KNOT.

VII. REEF KNOT. DRAWN TAUT. EACH PART COVERS OUT AGAINST ITSELF.

with four turns of rope about such a head, a man could hold enough on the free end so that the rope would be broken before there would be the slightest degree of slipping. With an ordinary cast iron cleat, about five feet in length, a man, handling a hawser four inches in diameter, can with two turns hold a larger steamer and swing her, and with three turns, apparently he has a sufficient power to break the hawser itself.

In all such cases it is only necessary to increase the number of turns sufficiently to reach a point where the power required to slip the rope is great enough to break it.

In a perfect knot it is necessary to have the strain force the parts together so that their friction is increased. At the same time it is desirable to have the turns so arranged that the part under strain is not cut off by a sharp bend across another part.

One of the most familiar illustrations of the increase of friction as the strain increases is found in the clove hitch shown completed in Figure II. Here the friction increases with the pull and the rope will break before the hitch yields or slips.

This is one of the most commonly used methods of making a rope fast. It can be effected while a pull is being made on the rope which gives it great value for many purposes. It consists of what a sailor calls two half hitches. That is, the rope makes one complete turn, or loop, around the post, spar or rope to which it is to be fastened, as is shown in Figure III. This loop is slipped over the end of the stick as in Figure IV, or made around it if necessary. Another loop is made at the same time, slipped over the end of the stick and we have the parts in the position of Figure V. Notice that the two ends pass under the central turn of the rope. Pulling on the ends and crowding the turns together brings the hitch into the form shown in Figure II.

V. CLOVE HITCH IN PLACE. THE TURNS LEFT OPEN TO SHOW THE POSITIONS.

Pulling on either end and at any angle only crowds the central turn the tighter upon the other parts, and the grip upon the rod or pole becomes greater. The friction of the parts increases so rapidly that, if once jammed fast, the rope will part before the hitch will slip.

This hitch is used for making boats fast to piles, stakes, cleats or rigging, or for fastening a line to anything. It is especially useful because it is so easily and quickly cast off, even after being under long continued and heavy strains.

It is also unique in one respect. It cannot only hold a line as fast as a hook or ring but on a smooth iron rod, or post, it is secure against sliding from the point where it is placed. It will fasten a hammock between two smooth iron posts as well as two rings or hooks. Where you place it there it stays. It fulfills all the requirements of a perfect knot. It will not "slip" and it does not "jam" and it is so easily untied that a person wonders how such simple turns have such power.

It must be noted that, in making a clove hitch to a ring, or a post where the loops cannot be thrown over the end, the end of the rope must be passed so as to bring the turns into the positions shown. For this reason not only must the way to make it be kept in mind but also the way the parts of the rope lie when the hitch is made.

Next in importance to the clove hitch is the square or reef knot. This is a knot that everybody tries to use, and on land it usually results in making a granny knot. With ropes of nearly equal size the square knot does not slip after it is tied and it does not jam so that it cannot be untied. The granny knot, on the other hand, slips when strain comes upon it and then jams so that it cannot be untied.

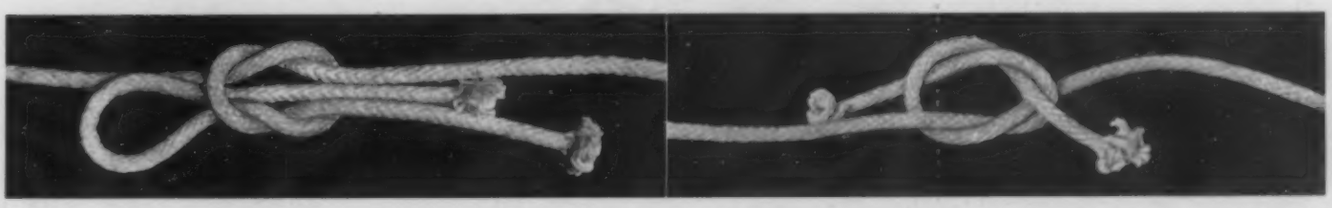
The function of the square knot is the joining of two ropes or two ends of rope. Figure VI shows how the strands run, and Figure VII how they look when the parts are drawn taut by a strain upon the ends. One old fellow who has sailed Long Island Sound for thirty years always ties a reef with one end left in making a single bow knot as in Figure VIII. When he wants to shake out a reef, a pull at the end opens the knot at once.

Everyone should know how to make a square knot. For want of this knowledge there is a great deal of inconvenience. When one sees a man stopping to tie a shoe string time after time, he may be fairly certain that that man can't tie a square knot. If a lady has the same trouble, you may make the same guess unless she has silk shoe strings which usually defy all rules of behavior.

Figure IX shows the granny knot which is all that a knot should not be. People make it through ignorance and carelessness when trying to tie a square knot. When a strain comes upon it the parts slip, usually for some distance. If the ends do not come through so the ropes separate, the knot "jams." That is, its parts become so imbedded that it is very difficult to untie it.

In order to be able to make knots quickly and with certainty, one must not only have a thorough knowledge of the turns which the rope makes, but he must have a certain skill of hand, or "knack", which comes from observing an expert at work. The book knowledge shows just what is done and how every bight goes but, unless one could command a biograph it would be difficult if not impossible to impart the indefinable movements by which the results are accomplished. The old fisherman comes to a landing in his dory and as he steps out with painter in hand, casts a couple of turns over a nearby stake and gives them a pull and a pat and the boat is fastened in about two seconds of time. If you know beforehand what he is doing, it is much easier to learn *how* he makes his clove hitch so neatly without giving it a glance. Our advice to the amateur is after mastering the theory, to take every opportunity to see an expert do the work, and to study all his motions. There is a reason in each motion if the man is really proficient. It may be in the way he grasps the rope or the twist he gives his marlin spike.

We are indebted to The Marine Manufacturing and Supply Co. of New York, for materials used in illustrating this article, also to The D. Van Nostrand Co., New York, publishers of nautical and scientific books, for valuable assistance.

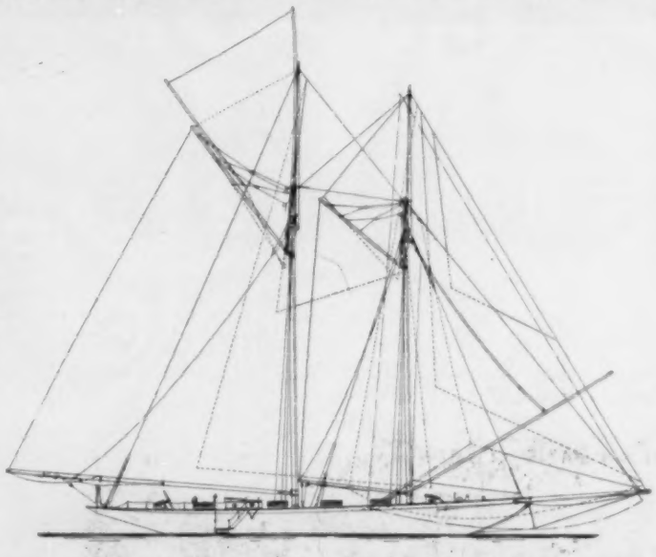


VIII. REEF KNOT WITH A BOW. BY MAKING A SINGLE BOW, THE KNOT CAN BE UNTIED INSTANTLY. THIS IS AN IMPORTANT ADVANTAGE IN SHAKING OUT A REEF.

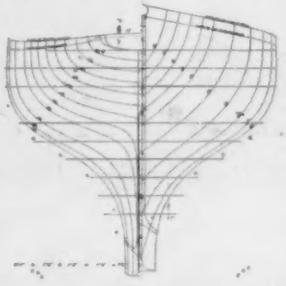
IX. GRANNY KNOT. THIS IS AN ALTOGETHER USELESS KNOT AND DANGEROUS AS WELL. IT IS NOT SECURE AND IS DIFFICULT TO UNTIE. AS THE SAILORS SAY, IT "JAMS" AND SLIPS AS WELL.

Venona

VENONA, designed and built by Smith and Ferris in 1905, for Robert Olyphant, Jr., of New York, shows how much comfort and accommodation can be secured in a flush deck craft of this size, 65 feet o. a., 45 feet w. l., beam 15 feet, and draught 9 feet 6 inches. Of course, the fact that she is a keel boat allows far more advantageous arrangement of interior space than would otherwise be possible. Her overhang aft gives a liberal amount of deck room.



Just forward of the steering wheel is a ventilating skylight under the after deck is a lazaretto arranged with shelves for sails, spars and gear. This is entered by a circular hatch just forward of the ventilator on which the binnacle is placed. Just forward of the after hatch is a companionway from which stairs lead down into a vestibule, separated by a sliding door from the main saloon. On each side of the after cabin, are 30-inch berths with 16-inch sofa lockers in front of them. At the after end of the cabin is a wash-basin with a mirror over it and a bureau on each side. Behind each berth are lockers and shelves, and above these is a door leading to storage space in the lazaretto. Just in front of this after cabin on the starboard side is a tall locker for oilers. On the starboard side of the passageway is a sofa with lockers underneath which may on a pinch be curtained off and used as a small stateroom. Behind this sofa is a chart locker with table to pull out. Pushing to one side the sliding door in the forward bulkhead of the vestibule one enters the saloon, 7 feet 10 inches in length and running across the boat. On each side are sofas with lockers underneath and shelves and lockers behind, while, on the forward side of the port sofa is a sideboard. In the roof, just over the dining table, is a large skylight. From the saloon a central passageway leads into the galley. On the port side of this is the captain's room containing a berth with a large locker and a folding wash-basin. On the starboard side is the owner's room containing a berth, large bureau, two medium sized lockers, a wash-basin and a sofa. A feature of the craft is that every inch of space in berths and sofas is utilized as locker room. Forward of this passageway, between the two staterooms is the galley with range, sink, large ice-box, a locker, a dresser and considerable shelf room. Forward of the galley and entered by a door and a step is the forecastle, containing hammock berths for a crew of four. The forecastle also has a couple of good sized lockers and a folding wash-basin. Immediately aft of the bowsprit bitts is a powerful winch for raising the anchor and between these and the foremast is a companionway leading to the forecastle. A skylight is situated directly over the range in the galley. The other lights ventilate both the captain's and the owner's room. She has about six feet head room under the beams.



Venona has to her credit the following record of victories during 1905, 1906 and 1907:

1905—Commodore's Cups (For Schooners), August 11th; distance, 39.5 miles; won over Katrina by 0.07.58. Rear-Commodore's Cups (For Schooners), August 12th; distance, 39 miles; won over Agatha by 0.17.21. Navy Challenge Cups (For Schooners), aggregate corrected time, August 11th, 12th and 14th; won over Kiwassa by 0.05.31.

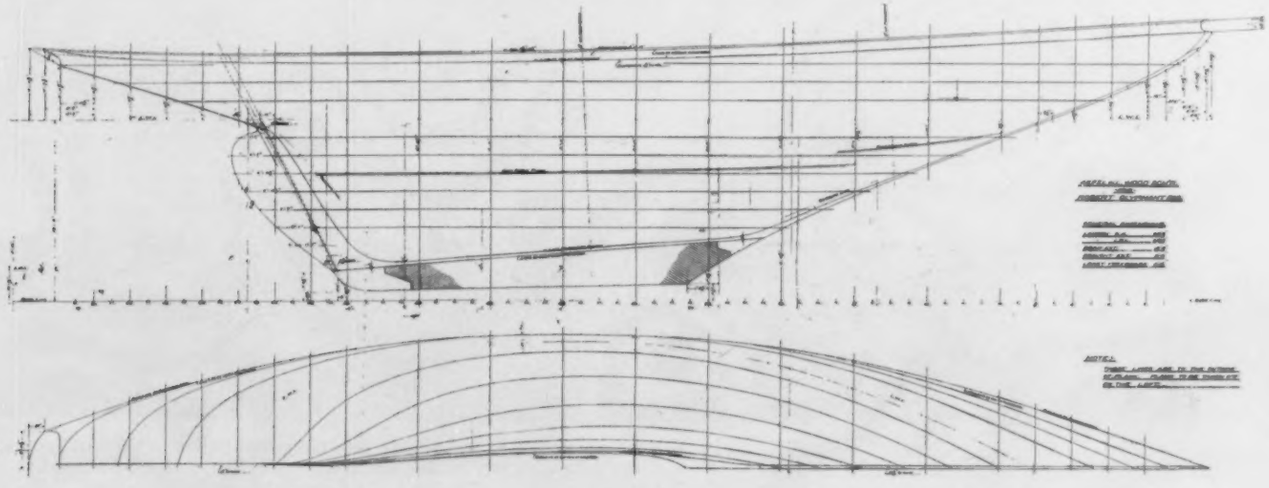
1906—Glen Cove to Morris Cove, August 3d; Classes EE and DD; distance, 39.5 miles; won over Simitar by 0.10.38 (First prize). Morris Cove to New London, August 4th; Classes EE and DD; distance, 39 miles; won over Simitar by 0.15.50 (First prize). Vice-Commodore's Cups (For Schooners, 2d Division), August 4th; distance, 39 miles; won over Cachalot by 0.12.58. New London to Newport, August 6th; Classes EE and DD; distance, 40 miles; won from Simitar by 0.14.22 (First prize). Commodore's Cup (For Schooners, 2d Division), August 6th; distance, 40 miles; won over Cachalot by 0.02.19.

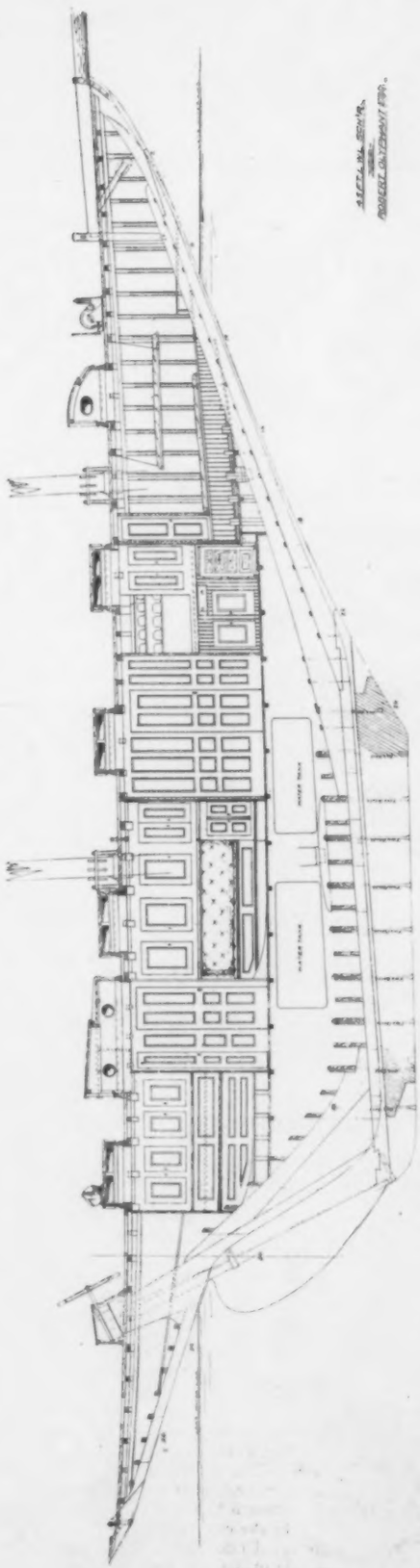
1907—Huntington to New London, August 10th; Class Special; distance, 0.64.1 miles; won First Prize (Finish times of Simitar and Gervalia not taken). Navy Challenge Cups (For Schooners), August 13th; distance, 37 miles; won over Katrina by 0.01.27.

Following is the log of Venona in the Indian Harbor Yacht Club's race, Greenwich to Hampton Roads, which was won by her:

Saturday, Sept. 7—Start of race to Hampton Roads. Under way at 12.30. Wind light northerly. Owing to short crew on Endymion, start postponed. Crossed line at 2.03.41 P.M., moderate southwesterly breeze, carrying balloon jib, fore staysail, main top staysail and working sails. The other starters were Endymion, Invader and Margaret. Set spinnaker shortly after starting. Eatons Neck abeam at 3.50 P.M., wind very light. Passed Margaret. Stratford Shoals Light abeam at 6.30 P.M. Horton's Point abeam at 11.30 P.M.

Sunday, Sept. 8—Went through Plum Gut about 2.30 A.M. At daylight all four schooners were in sight, Endymion and Margaret behind,





Invader slightly ahead. At 6 A.M. breeze, south by west wind all night having been variable, very light to calm. Passed buoy off Montauk at 7.48 A.M. Weather gloomy, breeze light but freshening during the day. About 3.00 P.M. a squall struck us from the southeast. Took in mainsail and set trysail for about two hours when we set all sail again. About this time carried away the balloon jib. About dark we were becalmed. Calm lasted all night. Two of the After Guard and steward sick.

Monday Sept. 9—About 5.00 A.M. southeasterly breeze set in lasting all day. During the afternoon Margaret passed us to windward, the two big boats having been lost sight of ahead during Sunday. Early in the night we again carried away the balloon jib. At 7.00 P.M. sighted Northeast End Light and mistook it for Absecom. On coming abreast of Five Fathom Bank Light at 9.00 P.M. we discovered our mistake and headed down the coast. Fenwick Shoals Light abeam at 10.45 P.M. Distant about ten miles. Strong southeasterly breeze.

Tuesday, Sept. 10—Passed Winter Shoals Light close aboard at 3.00 A.M. Wind steadily falling. Calm at 4.00 A.M. Light southwesterly breeze sprang up about 9.00 A.M., gradually freshening and veering more to the south. Had to beat down the coast. At 11.00 A.M. close in shore sighted Machipongo Inlet. Hog Island abeam about 4.30 P.M. Fine southerly breeze at 6.00 P.M., at which time passed Cape Charles Lightship about six miles to windward. Picked up Cape Henry about 7.00 P.M., and shortly after the lightship off the tail of the Horseshoe. Passed this lightship, which was the finish, and reported to the keeper at 8.12.54 P.M., so winning the race. Anchored to the west of Fort Wool at 9.54 P.M.

Yachts.	Finish.	Elapsed Time.	Corrected Time.
Venona.....	8.12.54 P.M.	78.09.13	63.48.09
Invader.....	10.40 18 A.M.	68.37.50	68.37.50
Endymion....	3.26.13 P.M.	73.24.15	71.21.39
Margaret....	7.13.51 P.M.	77.10.51	72.29.51

Venona won by corrected time by 4.49.41.

Tuesday, Sept. 17—From anchorage off Chamberlain Hotel at 11.30 A.M. About 1.00 P.M. wind shifted from southwest to southeast. At 6.00 P.M. Cape Charles Lightship bore east northeast. At 8.00 P.M. Hog Island was abeam.

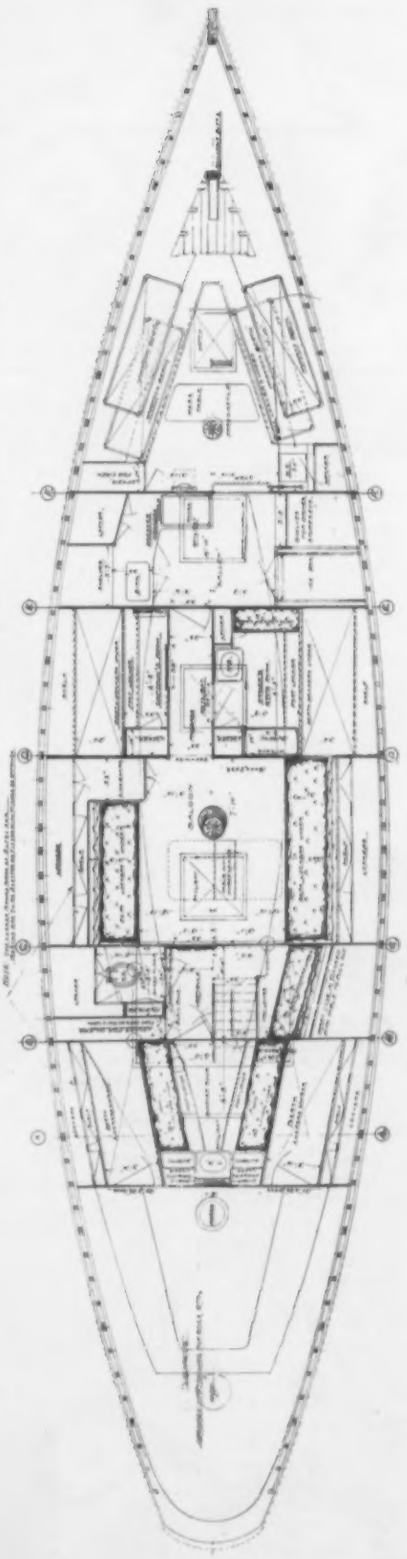
Wednesday, Sept. 18—Passed Winter Quarter's Lightship at 2.20 A.M. The log showed that from 8.00 P.M. on the 17th to 8.00 A.M. on the 18th, we ran 79 miles. Becalmed about 9.00 A.M. Took in all but head sails until 6.30 when we again set the lower sails.

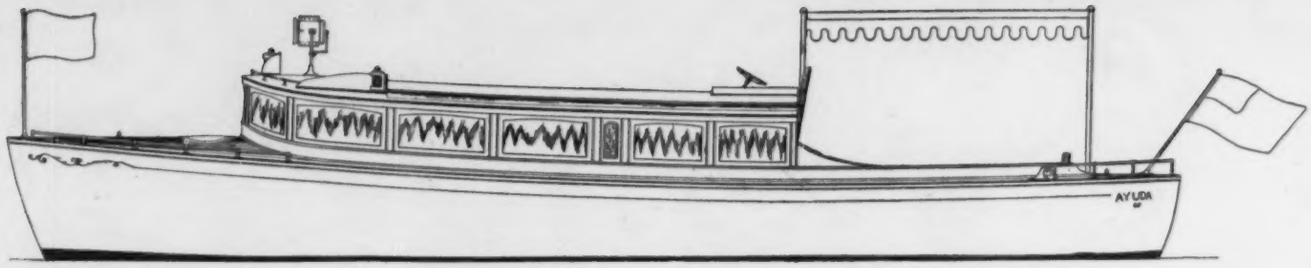
Thursday, Sept. 19—About 1.00 A.M. a strong northeasterly set in. Beat to windward until 4.00 A.M. As the wind increased we took in the mainsail and about 4.30 found it necessary to run before it until 6.30 A.M., when we again came on the wind and set trysail. Anchored back of the Delaware Breakwater at 1.50 P.M.

Friday, Sept. 20—Sailed from the Delaware Breakwater at 7.15 P.M. with a fair S. E. breeze.

Saturday, Sept. 21—Wind light but fair. Carried all light sails. Barnegat abeam about 8.30 A.M. Off Roemer Shoals about 5.00 P.M. we were struck by a heavy northwest squall. Took in all sail and anchored. Underway again in an hour. Anchored off Staten Island about 7.30 P.M. Before we could swing the tide carried us broadside on and under bowsprit of fisherman "Taunton." One davit carried away and rail and some rigging chafed before we got clear.

Sunday, Sept. 22—Underway at 8.00 A.M. with a light northwesterly breeze. Sailed up the harbor and the East River as far as the upper end of Blackwells Island where we took a tug. Anchored at City Island at 11.25 A.M., when Venona went out of commission and the season of 1907 ended.





Ayuda—A Compromise Type of Cruiser

AYUDA, built by the Truscott Boat Co. of St. Joseph, Mich., is a compromise between the old standing roof and the newer trunk cabin types, the idea being to secure the seaworthiness of the hunting trunk with the light, air and head room of the old fashioned "horse car" cabin. Her freeboard allows her head room in the cabin without an excessive height of house.

The steersman has a cockpit cut out of the after end of the cabin roof boxed in over the motor. This cockpit allows a good view forward and aft, and is entered by means of a folding step from the main cockpit.

This step lifts up and furnishes a comfortable seat.

The steering is done by an auto steerer; the engine control and reverse lever come up through the floor at the steersman's hand. An auxiliary steering device, for use in bad weather, is conveniently located at the forward end of the front cabin where it is out of the way when not in use.

Another novelty in Ayuda's construction, is the absence of the usual companionway-hatch, the door leading into the cabin having a rounded top fitting into a curve in the trunk roof carried far enough forward to allow plenty of head room for a person descending into the cabin.

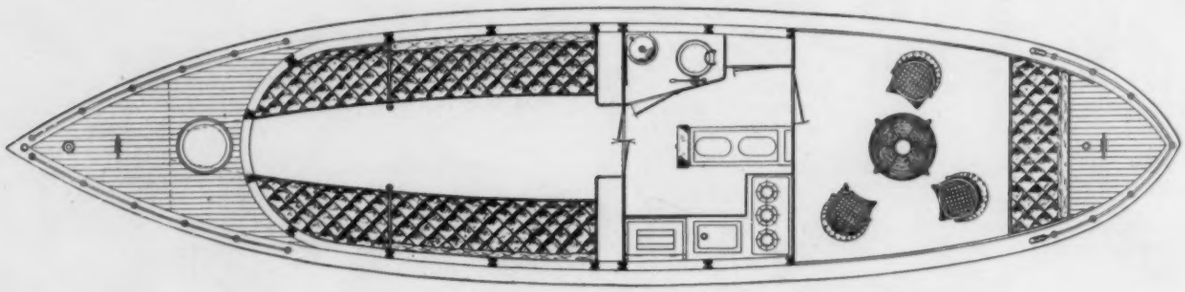
Ayuda is 37½ feet long over all, 9 feet beam and 30 inches draught.

A 4-cylinder Truscott 21-h.p. 4-cycle engine, drives her at a speed of about nine miles per hour.

Folding doors open into after cabin, at the after ends of which are two clothes lockers, one on each side with water tanks behind them.

Both forward and after cabins are fitted with extension berths with lockers underneath.

The forward deck-hatch is made water-tight by screw pressure from the inside and is large enough to allow the quick and easy passage of a man through it from cabin to deck when desired.



Shoal Draft Auxiliary Yawl Geraldine

GERALDINE was built to suit the particular requirements of her owner, who desired a staunch roomy, craft, with plenty of deck room, a good height under the cabin trunk, lots of beam and all the desirable points, combined with a shoal draught.

The shoal draught and height and area of deck-house make her particularly desirable for southern cruising. She is 37 feet over all, 27 feet on the water line, 12 feet in beam and has but 30 inches draught. The boat was built by the Gas Engine & Power Company and Chas. L. Seabury & Company, Con., of Morris Heights, New York, for Mr. G. M. Barrett of New York. She was built with a clipper bow, her owner preferring this to the more modern type.

Aft of the cabin trunk there is a liberal amount of flush deck space, while below is a saloon seven feet in length with an extension berth and locker on either side. Forward on the starboard side is the owner's stateroom, 6 feet 2 inches in length and 5 feet wide with fixed berths and drawers instead of lockers. In the saloon, the centerboard trunk serves as a pedestal for the drop-leaved table, while forward it is the base of the lockers opening into owner's stateroom on one side and galley on the other, the combination of base and locker forming a partition between the two rooms.

Forward of the owner's stateroom, and connected with it and also with the galley, is the toilet room, fitted with yacht closet and corner lavatory. Being situated under forward end of the cabin trunk, the toilet has full head room and is particularly well ventilated.

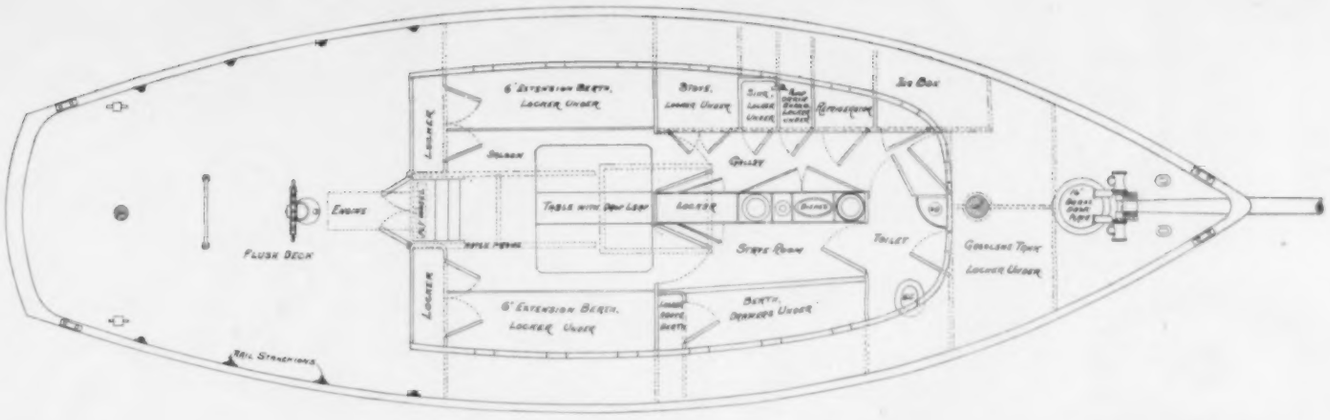
On the port side of the centerboard trunk is one of the finest galleys to be found on yachts of this size. It has a stove, large white enamel sink, ice-box, and a large glass dish closet.

The sail spread of 1027½ square feet is distributed as follows: mainsail, 600 square feet; mizzen, 192½ square feet, and jib, 235 square feet.

The craft also has a 12-horsepower gasolene engine under the forward end of the after deck, with the fly-wheel beneath the companion steps, and the reverse lever and control situated near the steering wheel.

The gasolene tank is under the forward deck and is placed high enough to allow a free flow of fuel to the engine.

Under the tank the spare room is utilized as locker space, with an



entrance from the galley. Forward of the tank, a 16-inch round brass deck hatch gives access to the chain locker.

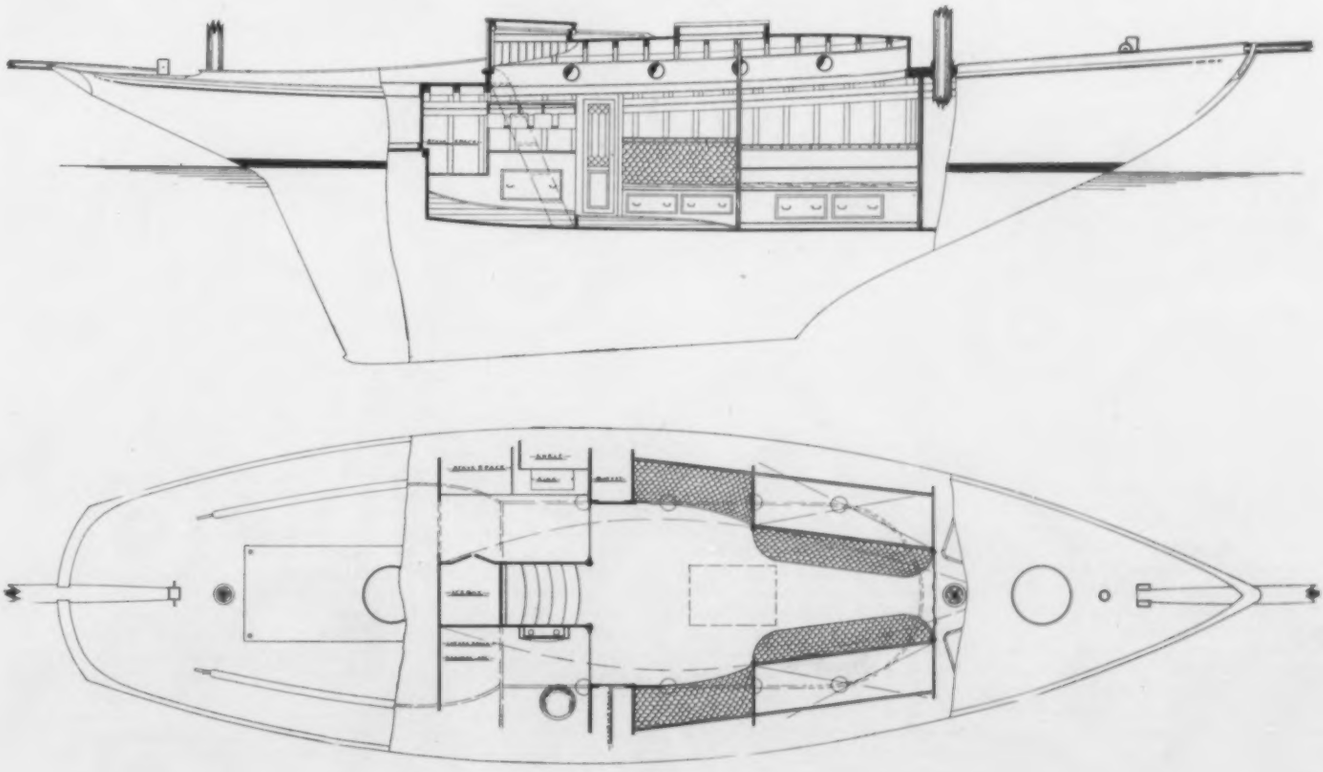
She possesses, to a marked degree the various advantages of a sailing craft, a power boat, and the living quarters and outdoor space of a moderate sized houseboat.

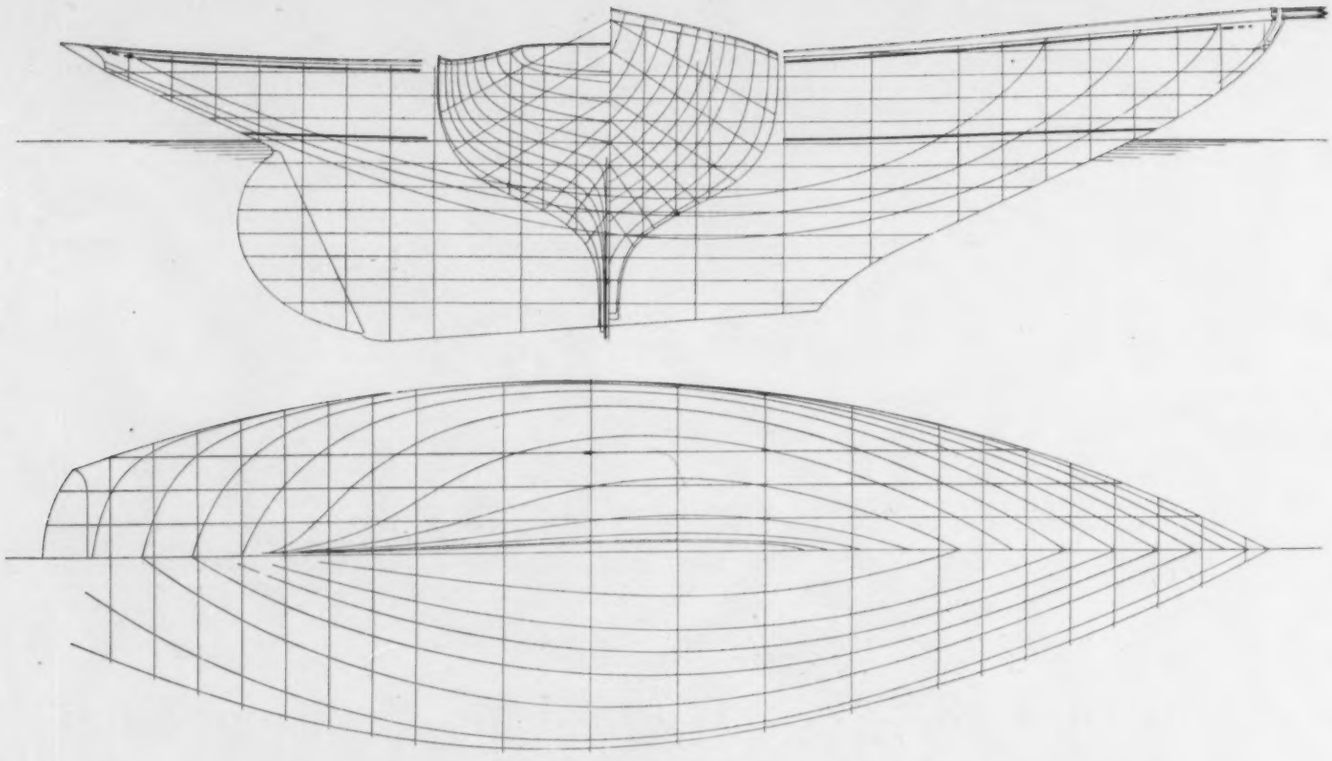
Her sail area is sufficiently large to allow her making good time under canvas, while her engine, not only robs a dead flat calm of all its annoyances, but enables her to navigate narrow winding inland waterways and crooked channels, with ease and at a speed which would be impossible under sail power equipment only.

The centerboard trunk has been converted into an asset instead of a detriment in the interior arrangement, and the entire layout of living quarters and stowage space shows that the designer not only understood what was wanted, but possessed the ability to fill the want.

Plans of a 28.5-Foot Water Line Cruising Yawl

HERE is a comfortable type of cruising yawl in which a generous amount of saloon space together with what is practically an owner's cabin forward, are secured by a rather novel arrangement of her toilet-room and galley, the former being located on the starboard side of the companion steps while the galley is located on the port side. The companionway located in the center of the cabin trunk leads into the after end of the main saloon which is fitted with seats on each side. Immediately forward of the main saloon, and in fact forming a sort of alcove is a double stateroom with berths on each side and transoms in front. Underneath the transoms under both saloon and alcove are lockers fitted with drawers. At the after end of the saloon a buffet is located on one side and there is hanging space for coats and oilers on the other. The ice-box is located under the bridge immediately aft of the cabin trunk, where it is easily gotten at from the galley and yet is well out of the way. Swinging port lights and a ventilating hatch in the cabin trunk light and ventilate the cabin. Forward of the stateroom and separated





from it by a curtain are the crew's quarters containing pipe berths for two men. The forecastle is also entered by means of a circular hatch on the forward deck. The stowage space under the after deck is also entered by a circular hatch.

Her dimensions are as follows: Length over all, 40 feet; length water line, 28 feet 6 inches; extreme beam, 11 feet 2 inches; draft, 6 feet 6 inches; overhang bow, 5 feet; overhang stern, 6 feet 6 inches. Her freeboard is 4 feet 4 inches, aft, 3 feet 6 inches; least freeboard 2 feet 7½ inches.

Her total sail area is 916 square feet distributed as follows: Jib, 178 square feet; Mainsail, 560 square feet; Mizzen, 178 square feet.

She has the appearance of being just what she is, a powerful, seaworthy little craft combining deep water cruising ability and comfortable accommodations for a small party of four in all without attempting to cater to a large party of guests.

She was designed by C. D. Callahan of San Pedro, Cal., and represents her designer's idea of an ocean racer of the "Tamerlane Pila" class.

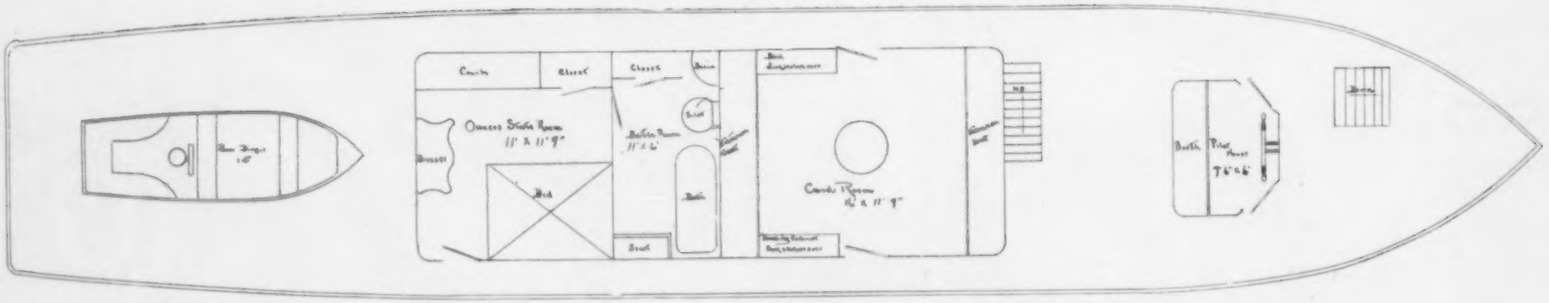
A 90-Foot House-Boat

ABOUT this time of the year many of us feel a reviving interest in the house-boat. It is such a cosy craft to think of in connection with a lazy life along the Florida and other southern waters that folks make resolutions at this time in regard to building one. Even though we do not intend to build we always like to talk about what we might do if we did build. This is one of the two reasons why we are illustrating the house-boat described herewith. The other reason is that she is so well thought out, so generous of dimensions, has so much outdoor room, that she is really a liberal education in the art of being comfortable afloat. Her over all length is ninety feet, she is twenty-one feet wide and draws thirty-six inches of water. She is equipped with twin screws driven by two 25-horsepower Standard engines and has an independent electric light and refrigerating plant and is luxuriously equipped with heating system and auxiliary heater for the water supply in the bath room and the galley. Each stateroom is supplied with hot and cold water.

The hurricane deck extends nearly the entire length of the boat and has a standing awning over the outdoor steering wheel. Just aft of this standing roof canopy, a gangway leads to the main deck on which, situated just under the forward end of the canopy, is a pilot house, seven feet six inches in width by six feet in length, fitted with a single berth. There is a steering wheel at the forward part of this pilot house for use in stormy weather. Between the pilot house and the main deck house is a stretch of sheltered deck. Aft of this is the card room, sixteen feet by eleven feet nine inches, fitted with desk, smoking cabinet, book shelves and table. Across the forward end there is a seat which affords sleeping accommodations for one, when necessary. Aft of the card room is the owner's bath room, eleven by six feet, and back of that and connecting with it is the owner's stateroom eleven by eleven feet nine inches, containing a large double bed, dresser, couch and clothes closet. In addition to this there is another clothes closet of equal size in the bath room. Aft of the owner's stateroom is an open deck space sufficiently large to afford storage room for a motor car. From the forward end of the main deck, a flight of stairs leads to the forward lower deck. Aft of this, and entered by a door from it, is the dining room, fifteen feet long and running entirely across the boat. This room is furnished with a table, three berths and a buffet. On the starboard side, a door leads into the galley, twelve feet by six feet seven inches, furnished with a sink, stove, table and cook's berth. Immediately aft of this, and opening out of it, is the cooling room, five by eight feet. Aft of the cooling room and the galley is situated the engine room, containing two engines, heater, ice machine and electric light plant, and opening off from it is the crew's bath room in which are two berths. The hall or passageway runs the whole length of the galley and engine room passing along the port side of the boat, which allows a guest to go from one end of the craft to the other without passing through any of the service apartments. Immediately aft of the engine room, the hall takes a turn and thereafter proceeds through the center of the boat. On the port side are two staterooms and a storage room, and on the starboard side two bed rooms and a bath six feet by six feet six inches. Each stateroom is furnished with a bed with corner wash basin, dresser and clothes closet. From the small after deck, a second gangway gives access to the main deck at the stern.

All of the interior of the lower deck is of white enamel finish and mahogany trim, with the exception of the dining room, which is in Flemish oak with dark red leather upholstering. The main deck is fitted in mahogany both interior and exterior. A 14-foot power dinghey is carried on the davits aft.

This house-boat will accommodate twenty persons comfortably in addition to the crew and servants. She was designed by the Pope Boat Company of Fond du Lac, Wis., for Charles Comiskey of Chicago, Ill.


Owners State Room
11' x 11' 9"
Bath
Berth
Table
Berth
Berth
Berth

Published by the Yachting Publishing Co.: Oswald Garrison Villard, President; Robert M. McBride, Secretary and Treasurer.

Our Strange Shipping Laws. The launching of Mr. Joseph Pulitzer's new 1,600-ton steam yacht at Leith, England, early in December, has attracted a deal of attention from the press. It has been pointed out, for instance, that our barbarous shipping laws give him the right to fly the American yacht flag from the stern of his boat, but that if he should carry a cargo on it or make it over into a passenger steamer, for, let us say, pleasure cruises in the West Indies, he would have to haul down the American flag and run up a British or German merchant ensign. Of course, the idea back of this absurd law is that it will compel Americans who want to have steamers for merchant business to give employment to American labor. It does nothing of the sort; it merely cuts down to the lowest limits the building of American steamers for anything except the coastwise trade. One can count on one's fingers the number of transatlantic or transpacific vessels carrying the American flag which have been built within the last ten years. American steamship owners would like to do what Mr. Pulitzer, Mr. Vanderbilt, Mr. Payne and a host of other American yachtsmen have done—buy their vessels in the cheapest place. Certainly it is an anachronism which permits wealthy men to buy pleasure craft abroad and forbids our steamship men to do likewise and have the privilege of sailing their craft under the stars and stripes. It must not be thought from this that YACHTING wants to see all American vessels built abroad. The tariff on shipping materials ought also to be taken off, in which case Americans could produce vessels more cheaply, if not better, than abroad, as the Cramps have testified publicly.

The case of Germany illustrates best of all what we want to point out. In the matter of coal and iron mines and their proximity to her shipyards, Germany is at a great disadvantage as compared with either the United States or Great Britain. Her shipbuilding industry is, moreover, of recent growth. But, such great strides has this industry taken during the last twenty years that the Germans can now build as fine ships as those constructed in England. All the time, however, that their shipyards were in the process of development, German owners of pleasure or business craft were allowed to buy ships in England or elsewhere and fly the German flag on them. Nobody denounced them as unpatriotic, and no legislator was so stupid as to wish to make them fly a foreign ensign. Yet time has shown that this liberty of purchase abroad in the cheapest market in no wise hinders the growth of the wonderful yards which now turn out the great German liners. Not even in Turkey is there such an idiotic statute as our shipping law to be found. The only country which ought to have similar ones is Switzerland.

The Brooklyn Yacht Club's Cup. When the International Cup Committee of the Brooklyn Yacht Club announced that the conditions for the $3,000 Cup, offered by the Club as a trophy for foreign challengers, would be as broad as the very sport of yachting itself, it was even declared by some rash persons that it would "make no difference whether the foreign yacht owner challenged with a 10-foot dory or a 110-foot schooner; whether the challenging craft sailed here on her own bottom or was carried in a balloon." When the conditions were actually published, a number of restrictions appeared. A challenging yacht must, it appears, come from its home port to the place of contest under its own sail. The maximum and minimum load water line lengths for sloops and schooners were specified, in addition to other stipulations. This is as it should be. The original statement naturally evoked a storm of criticism and the Brooklyn Yacht Club would have found itself in a ridiculous position had not the deed of gift been hedged about by proper conditions. A yacht race without rules covering every point of the contest would be as absurd as a match between the 10-foot dory and the 110-foot schooner.

Probably, the Brooklyn yachtsmen allowed their enthusiasm to run away with them when they first decided to put up a trophy with the intention of having it take the place of America's Cup. If a cup is to be offered for the purpose of stimulating international yachting, it must be given in a dignified way and under proper and attractive conditions. It must not be forgotten that there are various cups on both sides of the Atlantic, stored away in lockers. There is the Brenton Reef Cup, for instance, taken with the Cape May Cup in 1885 to England by Genesta and brought back in the nineties by Navahoe, the Cape May Cup being returned by default a few years ago. Any foreigner could challenge for these trophies, under broad conditions, for races from Brenton Reef to Sandy Hook in one case and from Sandy Hook to Cape May in the other. On the other side of the ocean are the Royal Victoria Gold Challenge Cup and the Royal Victoria Yacht Club Cup, both of which could be challenged for by Americans desirous of international yachting honors. Nevertheless, we thoroughly respect the motives and desires of the Brooklyn Yacht Club members and see in their action another striking illustration of the dissatisfaction of the American public with the present situation of America's Cup and its unfortunate rules. And the London *Yachtsman* does not do the Brooklyn Yacht Club justice when it says in its recent issue that:

"One of the results of Sir Thomas Lipton's failure to complete negotiations with the New York Yacht Club for a new attempt to 'lift the cup' which has never cheered but seemed, for a time, to have inebriated him, is the establishment by the Brooklyn Yacht Club of a rival trophy. No such restrictions as now surround the America Cup are to be found in the conditions which govern the new trophy; but it seems to have little prospect of celebrity. The difference in the rules of measurement, which unfortunately exist between Europe and America, forbids any prospect of intercontinental racing. The suggested Swedish challenge for the America Cup fell through for the same reason that debarred Sir T. Lipton from building a new challenger, and the establishment of a new trophy by the Brooklyn Yacht Club was doubtless intended as a protest on the part of that club against the action of the N. Y. Y. C., rather than as a serious attempt to encourage international racing."

This is not the proper motive to attribute to the public-spirited Brooklyn sportsmen.

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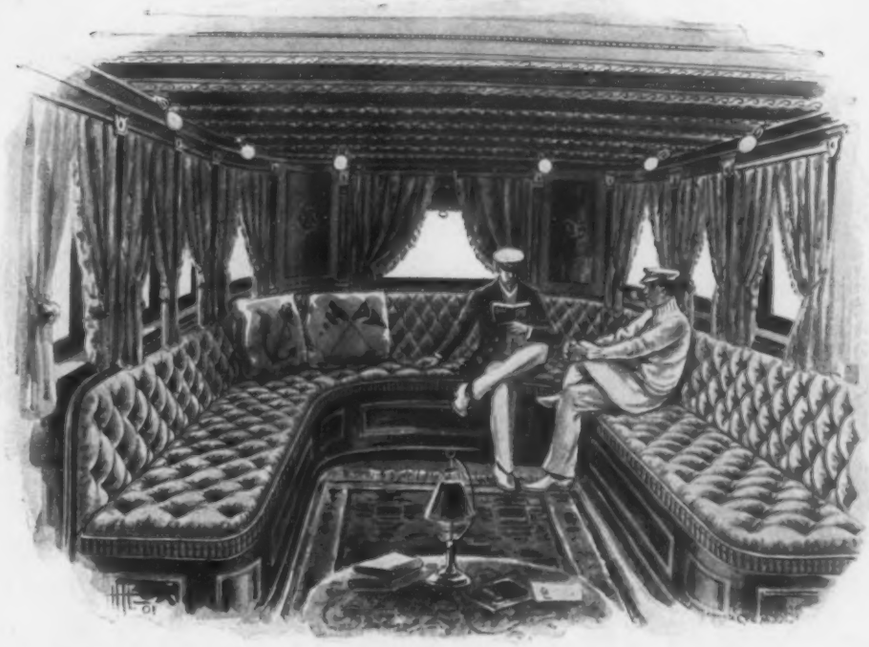

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Recognized by U. S. Steamboat Inspectors as Auxiliary Life Preservers.

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Soft, Elastic, Handsome, Durable, Non-Absorbent, More Buoyant than Cork, and a Better Life Preserver.

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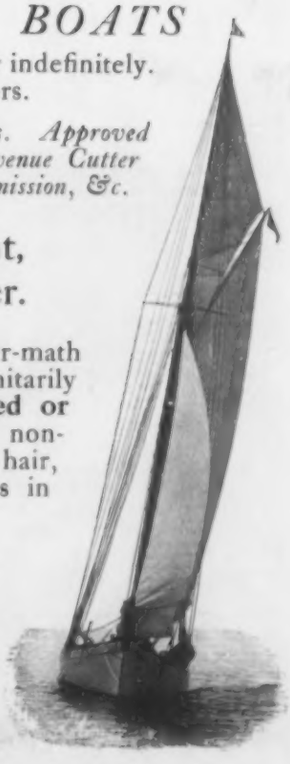
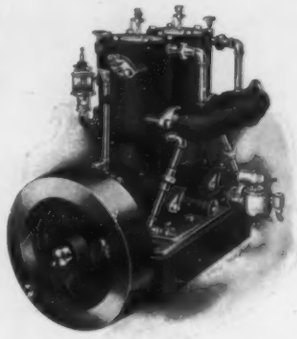


MOTOR BOAT SUPPLEMENT

New Ideas in Craft, Engines and Accessories



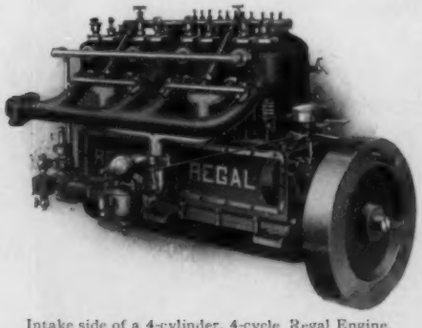
THE SHOWS

THE National Motor Boat and Engine Show, which was held at the Coliseum in Chicago, from January 1st to 8th, inclusive was a success. The number and character of the exhibits was far beyond anything of a similar nature ever before held in the West.

The attendance was more than good and, from reports received at YACHTING's office, the returns to the exhibitors more than satisfactory.

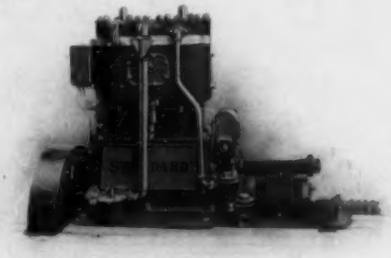
This is a particularly happy omen for the Show to be held at Boston in the Mechanics Building, January 25th to February 1st inclusive under the same auspices, that of the National Motor Boat Association and under the management of Chester *I.* Campbell, to whose ability and the loyal support which he has received from the Association the success of the season's exhibits is to be credited.

Motors for Light and Heavy Craft. A 3-horsepower, 5-horsepower, 10-horsepower and 16-horsepower high speed engine and a 7, 14 and 45-horsepower heavy duty slow speed will be the showing of the Regal Gasoline Engine Company of Coldwater, Mich., in space number 87. This is a pretty complete showing covering practically all classes of motor boat needs. These engines are all of the 4-cycle type. In the Regal engines the valves are easily examined by the removal of the plugs in cylinder head. Speed is regulated, or rather changed, by moving timer box on front of the engine or by the throttle of the float feed carburetor. Cylinder heads and jackets are cast in one piece. Both intake and exhaust valves are mechanically operated by tool steel cams and rollers enclosed in the crank-case. Gears and bearings are easy of access through removable plates covering the hand holes. A positive oil system lubricates all bearings.



Intake side of a 4-cylinder, 4-cycle Regal Engine, showing time and throttle controls.

A Good Engine Assortment and a Serviceable Generating and Pumping Plant. At both the Boston and Chicago Shows the showing of the Standard Motor Construction Company, Jersey City, N. J., consisted of an 8-horsepower 2-cylinder, an 18-horsepower 3-cylinder, a 25-horsepower 4-cylinder, a 60-horsepower 6-cylinder and a 25-horsepower 4-cylinder auto-marine engine. Also,



A Standard 2-cylinder, 4-cycle, 8-horsepower engine. Well adapted for service on a moderate sized craft.

a 1½ K. W. electric generator and fire pump combination set. The 6-cylinder 60-horsepower is equipped with an air starting device.

The little 1½ K. W. set is designed to generate electric lights for lighting the ship; to pump bilge; for fire service; pumping compressed air for starting the main engines or blowing the whistle and fog horns. It is fitted with cross head, and on the lower part of the cylinder is the air pump. The bronze water pump is geared at slow speed, and is easily disconnected when not in use. The dynamo is direct connected to the engine base; speed regulation is by automatic cut-off governor. Sparking is by low potential contact spark. The little machine operates at 700 r. p. m. and runs very quiet and smooth; it occupies but very little space in comparison to its auxiliaries and attachments. The air starting device on the 60-horsepower engine consists of an arrangement of valve motion that permits admitting compressed air at the proper time for turning over engine, without interfering with the regular functions of the engine starting on gasolene; this combination permits of positive starting and by the use of the valve gear made reversible, permits of reversing the engine.

The popularity of this type of engine can be easily seen from the fact that the Standard Company has already built forty-five 300-horsepower engines single acting; twelve double acting 300 to 500-horsepower, and about thirty 100-horsepower engines. All of these are of the self starting and reversing pattern coupled direct to the shaft and without reverse gears.

Two Noteworthy Craft. The exhibit of the Electric Launch Company of Bayonne City, N. J., in spaces number 31, 32 and 48 will consist of the handsome 25 foot Electric Launch and the Elco Peerless Express, shown by them at the New York Show and described in the December issue of YACHTING.

A Compact Combination. A combination of spark plug and induction coil is the product of the Orswell Igniter Company, 382 Atlantic Avenue, Boston, Mass. By means of this apparatus a high tension current in wires or connections is eliminated, and the ordinary induction coil is banished. The makers claim that it is not only reliable, durable, heat and moisture proof, but is non-shockable. The illustration herewith gives a fairly good idea of the apparatus, which is shown at space number 167-A.

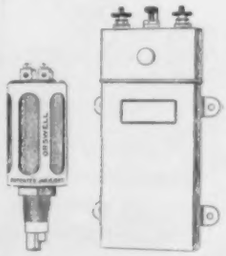
The coil is incased in heavy mica, hermetically sealed, and contained in a brass casing protecting and supporting the entire apparatus. There is no ground connection of the secondary terminals, these being connected inside, directly to the sparking point, making a double pointed plug. With this apparatus there is no high tension or secondary current except at the sparking points, and the makers claim that, as all wires and connections that are exposed, carry the primary or low volt current only, there is no leakage or short circuit from any cause.

A brass cap covers the outer end of the spark plug and prevents corrosion of wire connections.

One vibrator will operate any number of cylinders.

The vibrator, which is a part of this system, together with the condenser are both contained in a brass box having a removable cover.

The dimensions of this box or case are 3 inches width, ¾ inch thickness, 7½ inches length and the weight 15 ounces. The vibrator is automatically adjusting for wear of the platinum points. The adjusting screw is always locked, jar proof, but is instantly adjustable by the fingers only. It is claimed that the action of the vibrator is very sensitive and allows a much shorter length of contact than is commonly used even for high speed motors and is therefore very economical in its use of current.



Orswell spark plug, induction coil and vibrator. This is a very compact sparking apparatus, made with the idea of doing away with high tension current except at the sparking points.

Lighting Talk Number 2.

PERHAPS your engine is a large one and you remain at anchorage for a greater length of time than the capacity your storage batteries will furnish light.

In such a case you do not want to expend the gasolene necessary to turn over your high powered engine, just to charge your batteries.

For such cases we supply the finest, neatest, little auxiliary motor connected up to a dynamo, all ready to furnish you all the light you may require.

Here is a good idea of how the outfit looks—pretty nice, is it not?

Tell us about your requirements and we will be more than glad to suggest the most effective manner of meeting them.

Our new and fully illustrated catalogue will be of much help to you in figuring out your probable outfit. Let us send it to you.

Richardson Engineering Co.
Hartford, Conn.

NEW YORK SALES OFFICE: Motor Boat Supply Co., 107 Liberty St.
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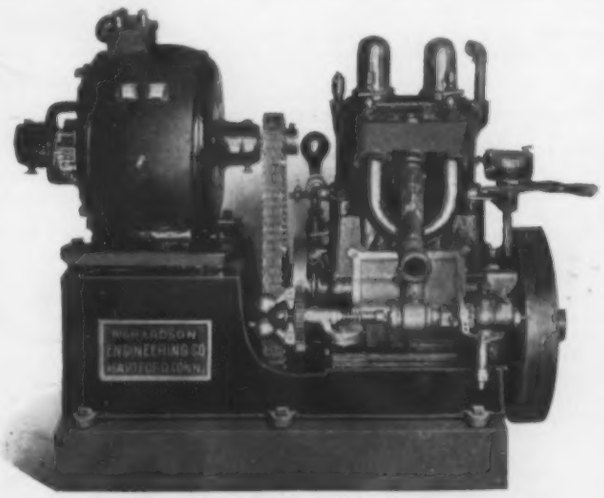


RICHARDSON INDEPENDENT GENERATING EQUIPMENT.

PRACTICE vs. THEORY

THERE is a great deal in theory that doesn't work out in actual practice.

A good many things which look very attractive in the design and accommodation plan prove considerably less valuable when put up against the test of actual usage on the water.

The President of the Nilson Yacht Building Company was a sailor before he ever designed or built a craft, and he is always willing to put any craft constructed by his Company up against the actual test of the kind of service for which she was built.

Moreover, having been a boat builder before he studied designing, he has had a practical experience of his own in the impracticability of many things that look very, very good on paper and prove very, very uncomfortable in a seaway.

As an illustration of the class of work turned out by this Company we show an interior view of the forward end of the saloon of the Harford whose plans we showed in the January issue.

The width of the transoms, the size of the passageway, the depth of cupboards, desk and the entire arrangement shows that the craft was fitted for actual and comfortable life aboard, and while the finish is rich and handsome there is no trace of "gingerbread" in the general effect.

When *YOU* want something just as good, we would like to talk over the matter with you.

Correspondence invited with those desiring the highest grade of construction.

The NILSON YACHT BLDG. CO., Baltimore, Md.

BUILDING AND REPAIRS TO HULL, MACHINERY AND RIGGING. MARINE RAILWAYS AND WINTER STORAGE.
Visiting Yachts Steer W. from Fort McHenry for 1 Mile. SUPPLIES OF ALL KINDS. No. Catalogues.

A Fast Launch and Some Up-to-date Engines. The Gas Engine & Power Co. and Charles L. Seabury & Co., Consolidated, of Morris Heights, New York City, had on exhibition at the Chicago Show the 40-foot teakwood launch shown by them at the New York Show and described in December YACHTING and also a 4-cylinder 4½ by 5-inch Speedway Motor, a 4-cylinder 6½ by 8-inch and a 6-cylinder 6 by 6-inch Speedway Motor with double ignition.

These will also occupy the booths, number 66 and 67 at the Boston Show.

A Reversible Two-Cycle Engine. Of interest to those desiring a reversible two-cycle engine, will be the exhibit of 2, 3 and 5-horsepower single, 6-8, double and 10-12-horsepower 3-cylinder Caille Perfection Motors, shown by the Geo. C. McLaughlin Company at space number 12.

This engine is supplied with a large multiple sight feed oiler which lubricates every working part. With this device it is only necessary to fill the oiler and set the same to drop about ten drops per minute.

The crank-shaft is a Drop Forging, machined and ground to one-thousandth of an inch. By tapering the crank-shaft, afterwards keying the fly-wheel and securely locking it in place with large lock nut, it is impossible for the fly-wheel to work loose; yet, so perfectly is the tapered hole in wheel fitted to shaft that by unscrewing nut and tapping wheel with hammer, it can be easily removed.

A Lunkenheimer Improved Generator or Kingston Float Feed Carburetor is furnished.

An elevated timer, with break and speed lever, allows running engine at various speeds and reverse without gears or reversible propeller.

Cylinders are cast from a specially prepared, tough, strain-resisting mixture of iron, and are tested under hydraulic pressure before being machined. They are ground to fit the pistons perfectly, insuring high compression and maximum power. They are surrounded by a water-jacket of ample proportions, keeping them properly cooled with engine at highest or lowest speed.

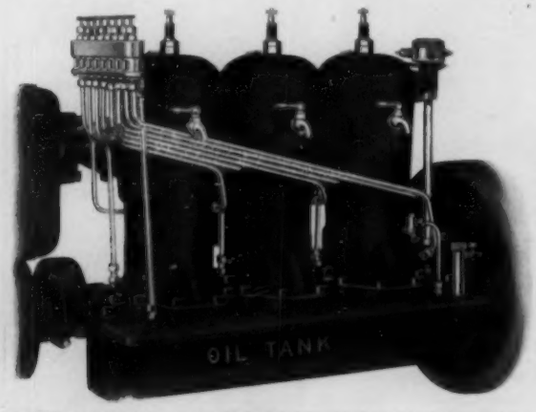
Bearings are babbitted with highest grade babbit obtainable.

The connecting rods are made from extra quality bronze castings, and babbitted at the crank-shaft end.

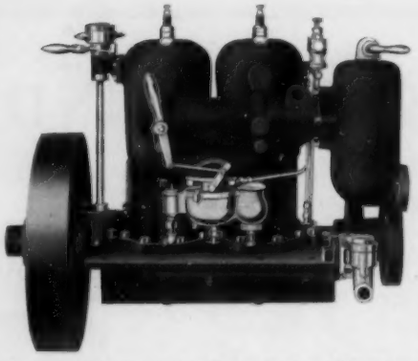
Bantam ball thrust bearings are used exclusively.

The pistons carry three rings pinned in position and are ground to a mirror finish and fit the cylinders perfectly.

Castings are made from best grade of close-grained grey iron, scientifically mixed to insure maximum strength and great durability—thoroughly inspected and tested before machining.



Starboard side of Ferro 3-cylinder Engine, showing lubricating system.


Port side of two-cylinder Ferro Engine. Note lever throttle control and water cooled expansion chamber (exhaust silencer) and water-jacketed intake.

The fly-wheel is a one-piece casting of high grade iron, perfectly fitted and keyed to crank-shaft. It is also counterbalanced, greatly reducing the vibration.

The large pump gives a steady flow of cool water to exhaust pipe continuously allowing engine to be run indefinitely without danger of overheating.

A double Muffler System disposes of exhaust gases so effectively that the Perfection is very quiet running—almost noiseless. Ignition is obtained by the pump spark system, equipped with latest improved coil, plugs and batteries.

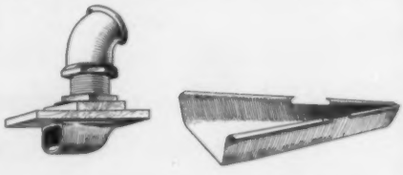
The commutator gears are covered, making it impossible for clothing or other articles to become entangled in them.

Warming the Carburetor A carburetor with an auxiliary air valve and with a water-jacket and intake exhaust connection to give just the right mixture at all temperatures and speed, make it possible to vaporize even a low grade of gasolene, is a new feature combined with the 1908 Ferro Engines. The exhaust which has always been more or less a bugbear to every motor boat owner has been taken care of in the Ferro Engine by an exhaust silencer, which, as it overcomes most of the noise does away with the necessity of a muffler. This silencing is obtained by the attachment of an expansion chamber to the exhaust pipe in which the exhaust gases are condensed by coming in contact with a small stream of water. This practically eliminates the noise and in addition acts as an expansion pump for the engine, reducing back pressure and thereby materially increasing the horsepower of the motor. With this equipment all exhaust pipes are water cooled. The carburetor requires but one adjustment and is under complete speed control by the throttle lever. By a uniform mixture of gas and air, different speed is created by the compensating air valve, and by increasing the vacuum in the priming cup, easy starting is secured.

A Fine Collection of Craft. The exhibition of the Racine Boat Manufacturing Company in spaces 26, 27 and 28 will consist of practically the same craft which appeared in their space at the New York Show which exhibit was illustrated and described in our December issue. At the Chicago Show this concern exhibited a 40-foot raised deck cruising craft, a 25-foot family launch, a 32-foot Spanish Cedar runabout equipped with a 50-horsepower 4-cycle and 4-cylinder motor, a 16-foot turbine launch drawing but eight inches of water, a 21-foot family boat and a 12-foot power tender under the rowing fort of which and entirely out of sight is a double opposed motor which gave the tender the appearance of being electrically driven.

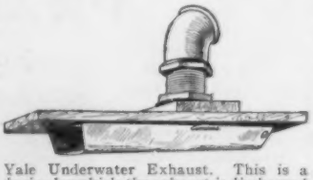
A Semi-Knocked Down Launch. At the Chicago Show, the Outing Boat Company of Kankakee, Ill., were represented by the following craft. A 16-foot launch with a 2½-horsepower Termaat & Monahan Motor, an 18-footer with a 3 1-3-horsepower Ferro Engine, a 20-foot launch with 7-horsepower 2-cylinder Ferro, and a 22-foot craft with a 10½-horsepower 3-cylinder Ferro. In addition to this they showed one of their 18-foot Outing launches in semi-knockdown shape with all of the planks fitted and fastened, sanded down, ready to receive paint and all of the deck timbers in place ready for decking.

A New Underwater Exhaust. An entirely new device for underwater exhaust shown by the Angier Company, of 735 Boyleston Street, Boston, Agents for the Ferro Engines, is the Yale, which is designed for use with either two or four-cycle engines.


No 1 No 2

The component parts of the Yale Underwater Exhaust showing simplicity of construction and method of piercing the planking.

It is claimed that, when properly attached, this contrivance, instead of decreasing engine speed, will, through producing a strong vacuum increase the number of revolutions from ten to thirty per minute, and that it will cause no resistance to the engine, even when starting with the boat at rest.

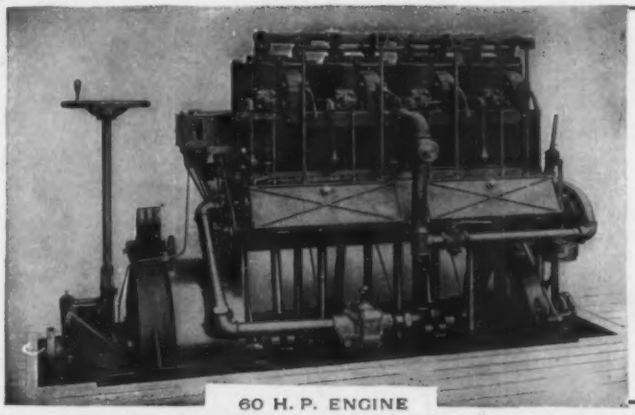

Yale Underwater Exhaust. This is a device by which the exhaust is discharged under water, and its manufacturers claim that by its peculiar construction back pressure is eliminated.

A Convenient Steersman's Control. The long distance control today assumes almost as much importance in a motor boat as the steering mechanism particularly as, with the engine, either forward in the forecastle or situated in the after cabin, the steersman is generally quite a distance removed from the motor power.

Even with a separate engineer a system of signals is much slower, particularly when in a tight corner, than a control right at the hand of the steersman himself.

The A. S. Morss Company, of 210 Commercial Street,

New Control Lever which may be installed at any part of the craft and by means of which the engine may be conveniently handled by the steersman.



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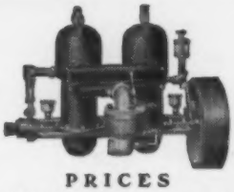

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5 H. P. Single "	125
10 H. P. Double Cylinder	225
16 H. P. " "	300

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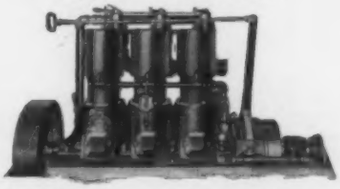

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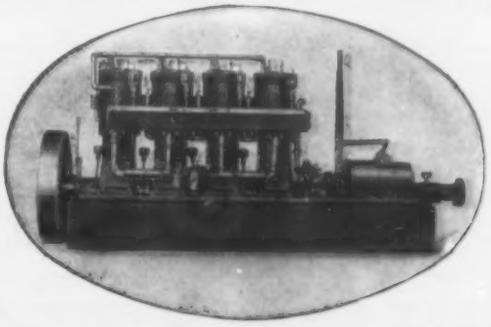

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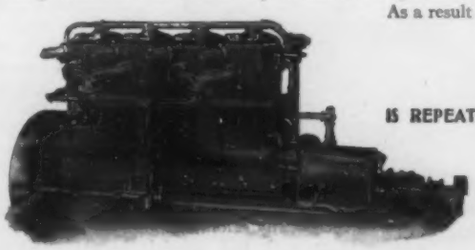
As a result of this painstaking care, the



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IS REPEATEDLY SELECTED, WHILE OTHER MAKES, SUBJECTED TO THE SAME TESTS ARE DISCARDED

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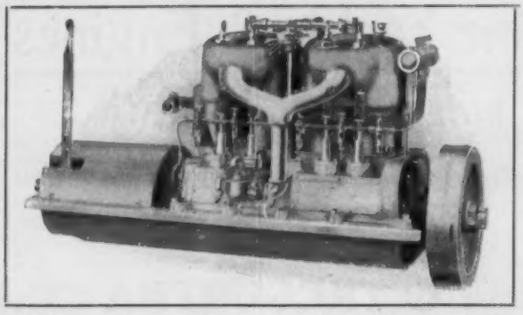

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Boston, will exhibit at spaces number 34 and 35, a new device which promises to be a valuable addition to power boat equipment. It consists of a control lever with a notched quadrant, in which a spring actuated clutch holds the lever at any desired point.

From the lower end of the lever there runs a rod connected with throttle or timer. By means of a ribbed bronze plate of small dimensions the apparatus may be fastened at any desirable place on bulkhead or coaming. The whole affair weighs but one and one-half pounds and is made in either plain or polished bronze.

Design and Advice for Builders and Purchasers. The Marblehead Yacht Yard of Marblehead, Mass. will occupy space number 90, where they will furnish prospective patrons with information and advice regarding designs of new craft for either pleasure or commercial purposes.

The well known reliability of Messrs. Stearns and McKay will inspire a confidence in those who desire to have their ideas put into tangible shape, either on paper or in the concrete form of the actual craft.

AROUND THE HORN—THE LOG OF A SECOND MATE

(Continued from page 91)

while the yards were being braced around and the storm spencer gotten in gear, but the first thing that happened, was a big sea, curling high and blue over the rail and falling in a great roaring smother over the deck. It washed everything clean and carried eleven men along with it, ten into the lee rigging, where they held on for their lives, but one poor fellow went overboard and disappeared instantly in the churning foam. I caught a glimpse of a dark object for an instant and that was all. As soon as possible, everybody was ordered aft on the poop, where they arrived an instant before another sea washed her, filling her decks so that nothing was visible from the poop to the topgallant forecastle except the forward house. The mate and myself quickly got hand-spikes and broke out the waterways to ease the deck of the tremendous load. She was quickly headed up to the wind and in a little while the main deck was habitable, though dangerous.

On the wind the ship would raise her bows, drawing twenty-four feet six inches clear out of the water, and then drop them up to the knightheads, forty feet, into the breast of the next hill of water ahead, throwing tons over her top-gallant forecastle, while all forward was a thick, driving smoke of flying spray.

All day, up to three o'clock in the afternoon, the gale kept up; but gradually slackened, so that before dark the sea had gone down enough for us to keep our head off again on our course.

The above facts, taken from my log-book, give as fair an account of a West Indian hurricane, as experienced on a well-managed ship, as any I know of. That is, in this latitude, for the storm was evidently the one that the Weather Bureau had announced as moving northward from Bermuda, the day before we left New York.

It was a bad beginning, to be hove to in the Gulf Stream for over thirty hours, so soon after leaving port; but as the damage to the ship was not very great, being principally the loss of a few sails, we felt quite thankful that things were no worse. We narrowly missed the center of the storm by wearing ship in time; still, when the wind began to get puffy and chop around to the southeast we were not far from it.

The poor fellow that we lost overboard had not been with us long enough for us to know him very well, but we felt his absence in a peculiar sort of way just the same. There is

A Notable Achievement of Ours

in sail making has been the equipping of

—LITTLE RHODY II.—

which made such a remarkable record last season in winning ten first places, seven second places and ten third places out of thirty-three starts. She finished second in the championships of the Boston and Corinthian Yacht Clubs and of the Massachusetts Yacht Racing Association. Winner also of the Exposition Cup at Jamestown races last September.

LITTLE RHODY II. is only one of many notable boats for which we have furnished sails. Among a large number we have equipped are the following :

VERGEMERE	CONSTANCE	CORONA
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The Fabric Used is in no small degree responsible for the success of our sails. It is made under our own formula, of the best combed peeler American cotton, and is the result of a lifetime's study of racing canvas.

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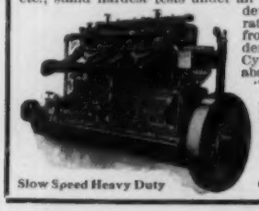

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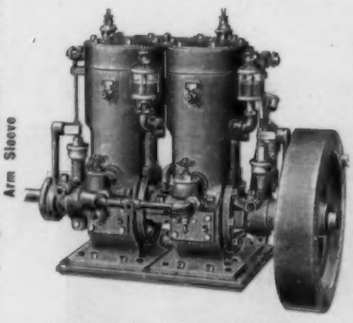

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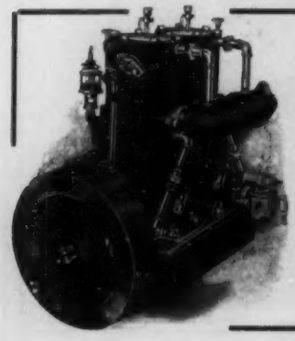

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Constructed along simple, practical lines. Light in weight, but strong and rigid throughout.

Easily and economically operated.

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something so uncanny in having a man disappear suddenly from a crew in this manner that, for a day or two, the depression of spirits that it caused was noticeable on everyones' face. The seas in the Gulf Stream are not as large as those that run off the River Plate, or off Cape Horn, but they are large enough, and we wondered what was ahead of us if the ship made such weather of it in these latitudes.

In a storm of this description one has a good opportunity to observe the character and height of waves. Although a sea looks very lofty when it is advancing upon a ship, its height is apt to be exaggerated. A most mountainous sea will seldom measure more than thirty feet from a line across two high crests to the intervening hollow between them.

During the next few days I had an opportunity to become better acquainted with the captain and mates. The first mate, Mr. Enlis, was a small man with only one eye, and only one tooth—the rest having gone from an attack of scurvy some years before while sealing on the Alaskan coast—and he was looked upon as an easy man on the crew. In fact, they called him a "father" to them.

In spite of being handicapped, as he was, Mr. Enlis was a good sailor and could use his sextant with his one eye as well as many captains could with two, for the skippers of the merchant service, as a rule, are not what are called "scientific navigators." I could not help thinking, at the time of the gale, of the captain of the bark "Kranser," with whom I thought of sailing, before deciding to go on the Silver Sea. In discussing navigation one day, on board his vessel, he informed me that, "when it came to taking 'lunars,' he generally used his hand lead." He left port two days before we did, and I wondered during the whole voyage if he had struck that same gale.

Since then, fortunately, I have seen his arrival announced in Montevideo, one hundred and thirty days, I think, from New York.

When the first heavy sea washed the main deck, I was in the lee scuppers trying to sheet home the storm spencer. Some of the men held back, knowing the danger of being carried overboard, and I began to curse them heartily. I heard a smothered yell and, looking, could see nothing but the top of a head in the foam. As the sea subsided a little nothing daunted, I began pulling afresh; but the men held back afraid. I started to yell at them again, and had just begun to launch an extra oath, when the captain yelled, "look out," and at the same instant a huge cataract of blue water curled over the weather rail and fell on deck with a crash. The men grabbed at whatever was nearest to them, and one fellow, apparently badly frightened, seized me just as he had turned his head and together we disappeared in the smothering foam. This sailor's pluck, however, was admirable; for as soon as the sea had poured off through the waterways and hawseholes, he appeared in the lee scuppers holding fast to the spencer sheet with one hand, while with the other he laboriously pummelled me for a delinquent sailor. He was completely blinded by the sea.

My next acquaintance with him was about a day or two afterward while he was standing on the main deck, watching the ship with a critically nautical eye. There was a man among the crew that had never been to sea before as a sailor; at least so he claimed, but had been a cook on a whaling ship. This man was working around the deck in a desultory manner, when the sharp eyes of Johnson spied him.

"Come aft here, you burgoo eating loafer," he yelled. The man looked up and caught his eye, so there was no mistaking whom he meant.

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ANY BOAT will attain its HIGHEST SPEED if propelled by a

Michigan Wheel

It is all in the *shape* and *pitch* of the wheel. Through years of experimenting, we have found the exact construction that produces the best results.

Send for our 1908 Catalog, full of information on all kinds of Propeller Wheels, all sizes of Reverse Gear and Universal Joints.

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THE FAMOUS MICHIGAN SPEED WHEELS
TRADE MARK
ON ALL MICHIGAN BOLT WHEELS

THE FAMOUS MICHIGAN REVERSE GEAR

THE DETROIT RIVER BOAT AND OAR WORKS
Designers and Builders of all kinds of high-class Motor Boats
WE HAVE NEVER BEEN DEFEATED IN ANY RACE
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Everything Needed for Ignition

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WE MAKE TO ORDER AND WE MAKE TO FIT
LAUNCH TOPS, SPRAY HOODS AND BOAT CUSHIONS.
C. M. JACOBSEN, 238 Jefferson Ave., Detroit, Mich.
—EVERYTHING IN THE MARINE LINE—
REPRESENTING:—C. A. Woolsey, Paint & Color Co., Jersey City; Geo. B. Carpenter & Co., Chicago; Smalley Motor Co., Bay City.

Gies Reverse Gear
Successor to the reversible propeller
Solves the Reversing Problem.
Gives absolute control of the motor-boat at all times.
1 to 80 H. P.—$15 to $90.
More made and sold than all other reverse gears combined.
Catalogue on request.
GIES GEAR COMPANY, Detroit, Mich.

"Go aloft there and brush the cobwebs from the sheave of the main sky-sail halyard," he ordered.

"Aye, aye sir!" answered the man, and jumping into the rigging made his way aloft at a great rate. In a few minutes he came down and reported that "all was clear." But the old salt was waiting for him, and cursed him roundly in his indignation, that he should have such a "damn fool" in his watch.

The third-mate was a young man of twenty-one, and had a soft thing of it, as he was a son of the owner that had found the land a little too crowded for him, and had, consequently, taken to the sea. He was far more intelligent than the captain and the other mates, although he was a sorry sailor. He stood his watch whenever he felt like it and did far less of a sailor's duties than anyone on board. In the tropics he would openly bring out a great-coat and lie down in the lee of the wheel-house, during his watch on deck, just as soon as he was certain that the captain had turned in. After which, he would dare the mate or myself to report him.

It was amusing to hear him quarrel with the mate, for quarrel they would all the time, although the third-mate is directly under the orders of the first as he is in his watch. Whenever the mate would insist on his doing some duty that he did not like, he would challenge him to fight. As he was quite large and the mate small, there was a good prospect of his winning. If this should be once accomplished, then good-bye to the mate's authority on that voyage. He did not dare to report him to the captain, for the captain would be sure to take his—the third-mate's—side, as it would never do to displease the owners. As he was not in my watch it was none of my business and no ship's officer is fool enough to follow altruistic sentiments.

The captain was a very prompt man. At seven-bells in the morning, my name would thunder through the cabin accompanied by a warning that breakfast would be ready in a few minutes and I must get my "hog-yoke" ready for the morning sight. Soon after this he would appear in his shirt-sleeves with a skull cap, having a long tassel on its top, on his head, and go on deck to see how things were getting along. It was not my duty to call sights for him, as this is distinctly the mate's job, but I never dared refuse.

At this time in the morning he was always in a particularly aggressive humor. If any assertion was made he was sure to contradict it flatly; and the mates, standing the morning watch, always looked for his appearance with a certain amount of concern that was not altogether valueless. It had the effect of producing alacrity in the swabbing of the moisture from the deck and paint work.

At breakfast, the day after the blow, every one on board was worn out with continual watching and anxiety. The fresh beef had nearly given out and the last piece was being served. The mate, who masticated his food by some manner better known to himself—although possibly he did it very much like an anaconda does his—landed his single tooth into an unusually tough piece of gristle.

He grunted out something that might have been inferred as a reflection on the quality of the food, and forthwith expelled the offensive morsel remarking that, "many a fool would have swallowed it."

"Yes," said the captain, but he didn't. To put good grub before you, would be like casting pearls before—before such hogs as you and that cannibal of second-mate are.

(*To be continued.*)

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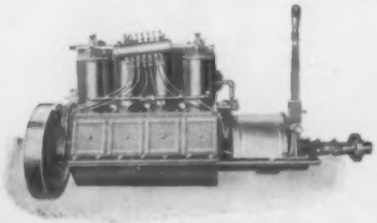

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Organized in 1904 by Mr. H. F. Hewlett, E. V. Pardessus, L. M. Pearsall, Walter Smith, C. H. Schneiker, R. J. James, Frank G. Bush, L. R. Jagger, William Scheer, E. J. Christopher, W. A. Courtland, Dr. P. M. Schaffner, W. L. Greeley, W. G. Gallagher and W. W. Butcher, all well-known Jamaica Bay yachtsmen, this organization has grown very rapidly and now includes in its membership residents of New York and Brooklyn.

At the present time there are 175 members enrolled, and the prospects of reaching the limit of 200 before May 31, 1908, are excellent.

There are sixty-six yachts in the Club's fleet, among the larger of which are the sloops Nepenthe, Hildegard, Sabina, Anita, Phantom, Abbe, Coot, Glad Hand and Uno; the auxiliaries: Osceola, Mohawk, Dorothy, Lillian, Alta and Yo Ho; the power boats: Alibub Santa Maria, Yenlo, Rosette V, Sylvia, Cannon Ball, Dolphin Reckless, Emma, Eleanor, Naome; and the

THE CLUB HOUSE.

racing catboats: Ariel Mavourneen, Avocet, Vitesse, Cigarette, Chico, Elsworth, Lillie S, Lochinvar and Netta.

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An excellent ocean course is afforded for the larger and seaworthy boats from an imaginary line one mile off the point of Rockaway Beach, to and around the Sandy Hook Lightship thence westward to Scotland Lightship and return.

This Club, while young, has been in the fore in its advocacy of ocean racing for boats of over thirty feet over all, and next season will see a series of interesting ocean races for valuable cups offered by officers of the Club.

MOTOR BOAT TYPES

(Continued from page 77)

of fine lines where she enters the water. Her fullness above the water line tends to lift her through a chop and throw the resulting spray downward and aft, and should she strike a log or obstruction she would lift instead of being stove in. A bow of this style would be as much out of place on a speed boat for deep smooth water racing as the speed boat bow and flat-bottomed or plumb or torpedo stern of the racer would be on a rough water fishing craft, while the fantail stern, just the thing for the comfortable moderate-speeded electric family boat, with its guards against damage when grounding, would be fatal to the speed of the racing craft, a good percentage of whose engine power would be absorbed in pulling the stern down and holding the bow up in the air, while the deep draught of the yacht tender would be a restriction on the useful area of the electric boat and a hold back to the racer.

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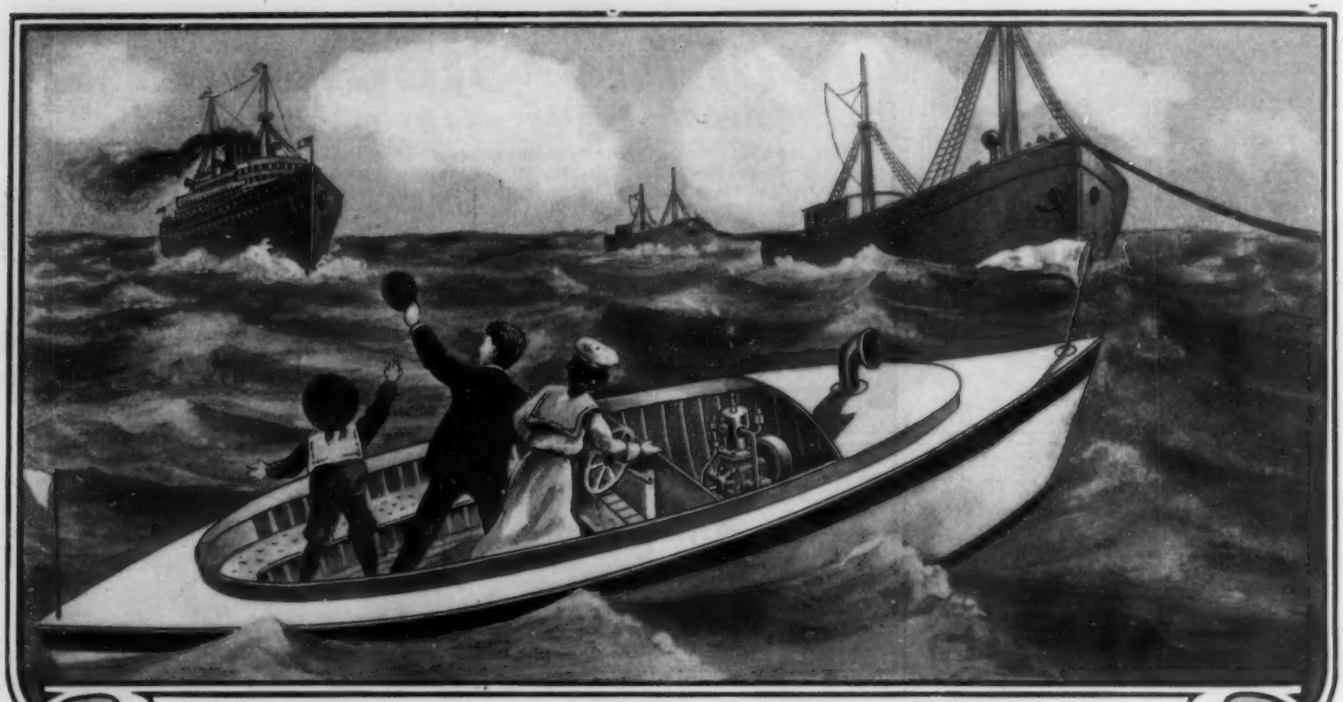

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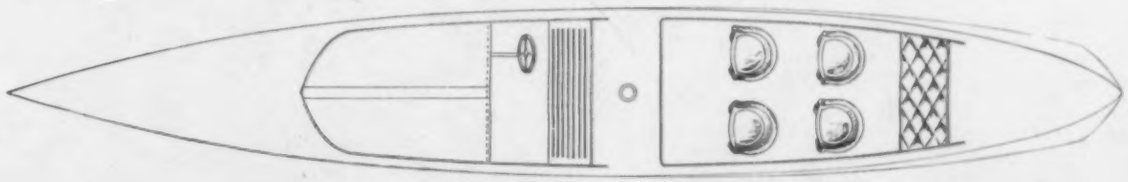

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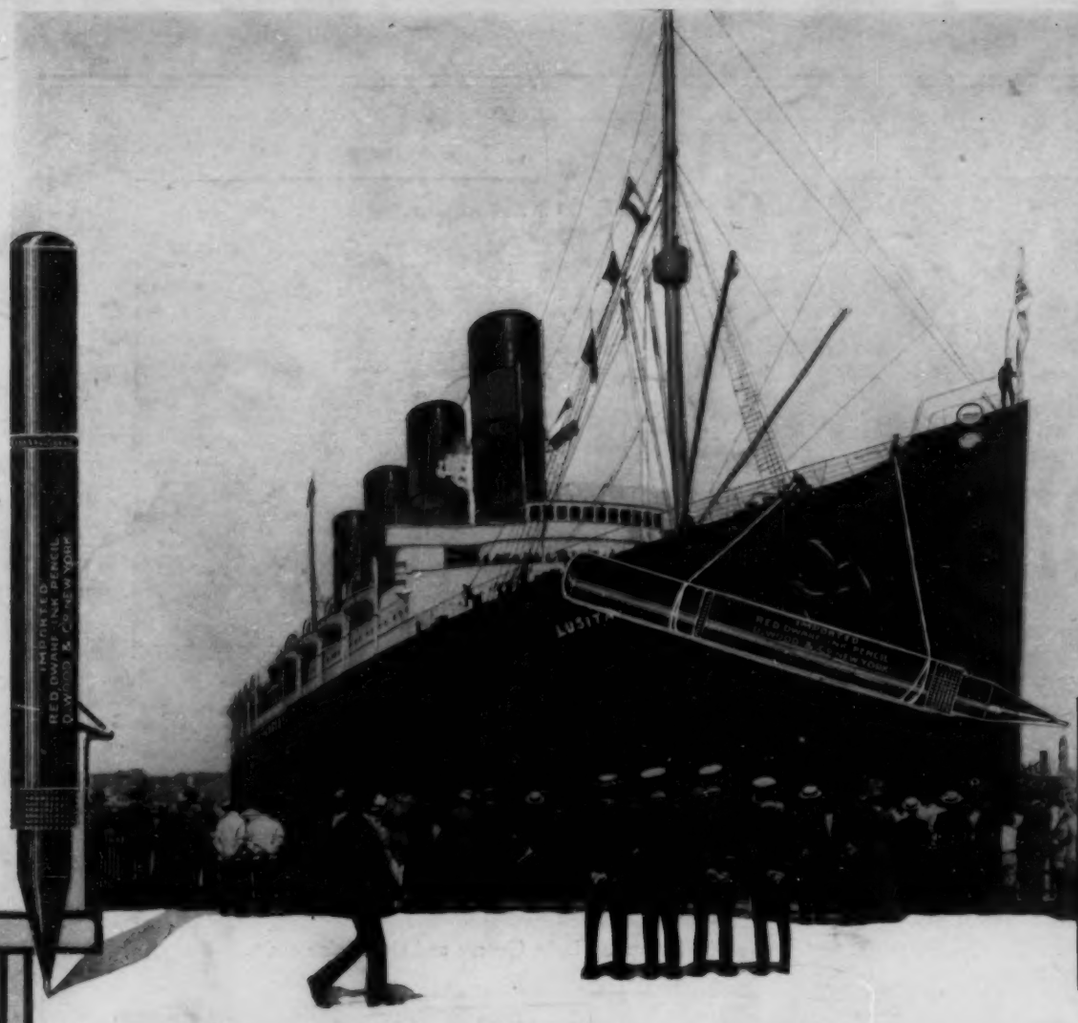

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